ST. LOUIS DISTRICT GULTURAL RESOURCE MANAGEMENT REPORT NUMBER 17

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SHALLOW SUBSURFACE GEOLOGY, GEOMORPHOLOGY AND LIMITED CULTURAL RESOURCE INVESTIGATIONS OF THE MEREDOSIA VILLAGE AND MEREDOSIA LAKE LEVEE AND DRAINAGE DISTRICTS, SCOTT, MORGAN, AND CASS COUNTIES ILLINOIS

Contract No. DACW43-82-10-0083

by Edwin R. Hajic and David S. Leigh

Harold Hassen, Principal Investigator, Center for American Archeology



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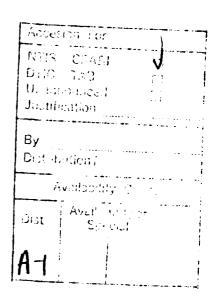
ST. LOUIS DISTRICT CULTURAL RESOURCE MANAGEMENT REPORT NUMBER 17

Shallow Subsurface Geology, Geomorphology and Limited Cultural Resource Investigations of the Meredosia Village and Meredosia Lake Levee and Drainage Districts, Scott, Morgan, and Cass Counties, Illinois.

Contract No. DACW43-82-D-0083

by Edwin R. Hajic and David S. Leigh

Harold Hassen, Principal Investigator Center for American Archeology



ABSTRACT

The Meredosia Village and Meredosia Lake Levee and Drainage District study is the fifth of an ongoing series of combined geologic, geomorphic, and archeological surveys of lower Illinois River valley levee and drainage districts. Subsurface investigations in Illinois Valley deposits are used in concert with geomorphic analysis and radiocarbon dates to identify, spatially delimit and date lithostratigraphic units, interpret depositional environments, and reconstruct the terminal Wisconsinan and Holocene valley evolution. Within this contextual framework, evaluations of the location and preservation potentials for surface and buried archeological sites are made.

ACKNOWLEDGEMENTS

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> Albert Alhorn Henry Alhorn J. J. Alhorn Bob Banghart Gary Banghart Byron Beauchamp Mrs. Virgil Beauchamp Tom Brackett Martin Burrus Drew Carls Steven Carls Marion C. Chute Everett Dunham Lorance Fricke Bob Gregory Edward Hammon Gary Hammon Larry Hardwick Maurice Hardwick Nadine Hardwick Roscoe Hardwick Andrew Harris James O. Harris Helen O. Head

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Field assistance was provided by Julia Clifton and Cynthia Danley. Carbonate and mechanical analyses were performed by Cynthia Danley. Figures were skillfully drafted by Cynthia Danley and Frieda Odell-Vereecken. The final manuscript was processed by Beverly Sexauer and Marjorie Schroeder.

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The U.S. Army Corps of Engineers Illinois Valley geomorphic and archeologic surveys are coordinated by Dr. Harold Hassen, Center for American Archeology.

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INTRODUCTION - PROBLEM STATEMENT

Since the late 1920's the Illinois River valley has undergone considerable artificial modification, conducted largely by federal agencies. An extensive levee system has been constructed along the Illinois and its major tributaries for flood control and navigation purposes. Floodplain drainage ditch networks also serve needs of the local farming community. The U.S. Army Corps of Engineers, St. Louis District, is planning a program of renewed levee modification and extension of drainage ditch networks in the lower valley of the Illinois River from Otter Creek (River mile 15) to Beardstown (River mile 90).

Archeological sites in alluvial contexts are frequently buried by sediments indicative of a variety of depositional environments characteristic of dynamic fluvial systems (i.e. Hoyer, 1980; Bettis and Thompson, 1981; Gladfelter, 1981; Ahler, 1976; Stafford, 1981; Chapman, 1978; Hoffman, 1980). The Illinois River valley is no exception to these conditions (Wiant, 1980; Hajic and Styles, 1982; Hajic, 1981a; Kraus, 1980; Houart, 1971; Farnsworth, 1976). Levee and drainage ditch construction on and within the Illinois floodplain necessarily requires excavation and sediment movement, potentially at the expense of buried archeological deposits. Aware of these archeological concerns, the Corps of Engineers desires to select borrow locations which would minimize archeological damage, and still provide construction material with suitable engineering properties. The Corps of Engineers has contracted the Center for American Archeology, Contract Archeology Program, to develop a predictive model that can effectively estimate the relative potential of encountering buried surfaces which might contain archeological material in selected levee and drainage districts (i.e. Scope of Work, Appendix The problem involves identification of possible buried site locations and their preservation potentials.

Historically, the Corps of Engineers has partitioned the Illinois floodplain into a continuous series of levee and drainage districts. These districts comprise the basic study units of the ongoing project. Districts extend roughly 7 to 14 km along the valley and are separated by

canalized and/or leveed major valley tributaries. It is within this organizational framework of selected districts that the predictive modeling necessarily proceeds.

THEORETICAL ORIENTATION

The Illinois valley has been a changing landscape for at least the last 13,000 years (Hajic, 1983b; Hajic and Styles, 1982; Butzer, 1977). Because archeological sites are deposits on landscapes, the quality of archeological site location predictive modeling capabilities directly depends upon the degree to which the present landscape, former landscapes and systematic formational processes are understood. In the stratigraphic record landscape change by geomorphic processes operating through time is evidenced. Furthermore, the stratigraphic record holds clues to archeological site location through interpretation of depositional environments by identifying and dating sedimentary units and lithofacies associations. Consequently, the Corps of Engineers project has been viewed from inception as a geologic problem as much as an archeological one. Buried archeological site potentials are most adequately evaluated in the context of a model of terminal Wisconsinan and Holocene evolution of the lower Illinois River fluvial system developed from a temporally grounded stratigraphic and sedimentologic framework. The reconstruction emphasizes identification of sedimentary units and paleogeomorphic surfaces as well as providing interpretations of the depositional environments and processes responsible for the observed stratigraphy. Furthermore, while broad in scope, the geologic reconstruction emphasizes construction of an absolute time framework which is sufficiently detailed to be archeologically relevant (see Appendix C, this volume).

Prior to fieldwork, several expectations regarding investigations of the lower Illinois River valley were outlined: 1) Due to the regional physiographic position of the Illinois River in the midcontinent, the geologic history would be potentially complex. The Illinois is tributary to the Mississippi River and the lower Illinois valley would have adjusted in response to fluvial events in the Mississippi valley (Clayton, 1982; Clayton and Moran, 1982). Simultaneously the Illinois valley has periodically served as drainageway for variable discharge from the Lake

Michigan Basin (Hansel et al., in preparation; Evenson et al., 1976; Willman, 1971; Hough, 1958). 2) Fluvial processes are likely to vary along the 120 km study reach of the Illinois valley at any particular time. This expectation is largely a consequence of current theoretical views of fluvial systems and processes. Changes external to a fluvial system, as well as changes inherent in the system, (i.e. eclipsing a geomorphic threshold) can trigger a set of complex responses involving erosion and deposition which may co-occur along different reaches of the system (Schumm, 1973; 1976).

Within a complex natural fluvial system, one event can trigger a complex reaction (morphologic and/or stratigraphic) as the components of the system respond progressively to change. This principal provides an explanation of the complexities of the alluvial chronologies, and it suggests that an infrequent event, although performing little of the total work within a drainage system, may, in fact be the catalyst that causes the crossing of a geomorphic threshold and the triggering of a complex sequence of events that will produce significant landscape modification (Schumm, 1973:307).

3) In addition to evaluating buried site potential, the collection of cores for a three dimensional reconstruction would provide a wealth of paleoenvironmental data. 4) Due to the mandated organizational framework of the valley, subsurface investigations would be intensive within individual districts selected by the Corps of Engineers and proceed one district at a time. The model would ultimately be for the entire lower 120 km of the Illinois valley although not all districts would be examined. The predictive capability of successive district studies would increase as the geologic model progressively developed. 5) A large number of radiocarbon dates would be required to develop the geologic model at an appropriate scale.

RESEARCH GOALS AND METHODOLOGY

The primary research goal, as outlined in Corps of Engineers scope of work, is to model location and preservation potentials for buried archeological sites in Illinois River valley levee and drainage districts. While the goal is archeological in nature, achieving it requires utilizing not just geomorphic and geologic techniques and methods, but more importantly, the interpretations of landscape change and development resulting from these techniques and methods.

Unlike previous geological and geomorphological investigations in the lower Illinois River valley (Butzer, 1977; Rubey, 1952; Root, 1935), most effort is being invested in subsurface stratigraphic investigation using solid cores collected with a Giddings hydraulic soil probe. Holocene sediments may be in excess of 15.2 m (50 ft.) in thickness and valley-bottom outcrops are normally limited to a few meters exposed in drainage ditches. The cores are being used to identify and trace depositional units, buried surfaces and soils; identify vertical and lateral stratigraphic relationships; interpret depositional environments; define paleochannel locations and morphology; recover datable organic material; and on occasion recover evidence of cultural occupation. Transverse valley cross-sections are constructed to provide a three-dimensional stratigraphic framework. Known surface site distributions from a variety of largely systematic surveys are being examined for each district and a limited survey at core locations is conducted. Under separate scopes of work, surface surveys are being performed along corridors paralleling levees (c.f. Hassen and Batura, 1983). These surveys normally lag behind the geologic/geomorphic investigations. Supplementing the principal research goals, the solid cores contain a wealth of paleoenvironmental Organic matter, molluscs and gastropods are at times abundant. data. The scope of work does not allow faunal and floral analyses; however, the collections have been curated for future study. Also, information provided from cores allows the alluvial record of the lower Illinois valley to be integrated into the regional late Wisconsinan and Holocene sequence. As the Illinois system is intimately linked through fluvial processes and responses to both the Mississippi valley and the Lake

Michigan Basin, its evolution may provide clues to the timing of events in these related systems.

The intent of this report, the fifth in the series of studies of Illinois River levee and drainage districts, is to evaluate the potential of encountering buried archeological sites in the Meredosia Village and Meredosia Lake Levee and Drainage Districts. The first report of this series (Eldred and Spankey Districts; Hajic and Hassen, 1980) (Figure 1) focused on the recognition and familiarization of soils, sediments, valley geomorphic features and their interrelationships. Rough approximations of buried site potentials were made. In addition to identifying this potential in the Nutwood District (Hajic, 1981b), it was noted that shallow subsurface sediments could be divided into seven distinct units traceable within the district. It was further noted that the distribution of some of these units had little or no relationship to the present floodplain morphology.

In the Hartwell and Hillview Districts (Hajic, 1981c; 1983b) emphasis was placed on identifying the continuity and variability of the seven sedimentary units defined in the Nutwood District. The definition of unit boundaries was refined. A limited number of radiocarbon dates from the Nutwood, Hartwell and Hillview Districts (see Appendix C, Hajic, 1983b) allowed construction of an initial temporal framework for the sedimentary units. At this stage, radiocarbon dates are second only to stratigraphic data in their importance to the project, and a considerably larger number of samples must be run for the model to be truly effective.

The Meredosia Districts provide an opportunity to investigate relict landforms and associated sediments which are absent from previously studied Illinois Valley districts located farther to the south (Figure 1).

LOCATION

The Meredosia Village and Meredosia Lake Levee and Drainage Districts are located in northwestern Scott, western Morgan, and southwestern Cass counties (Figure 1). The Meredosia Village District is

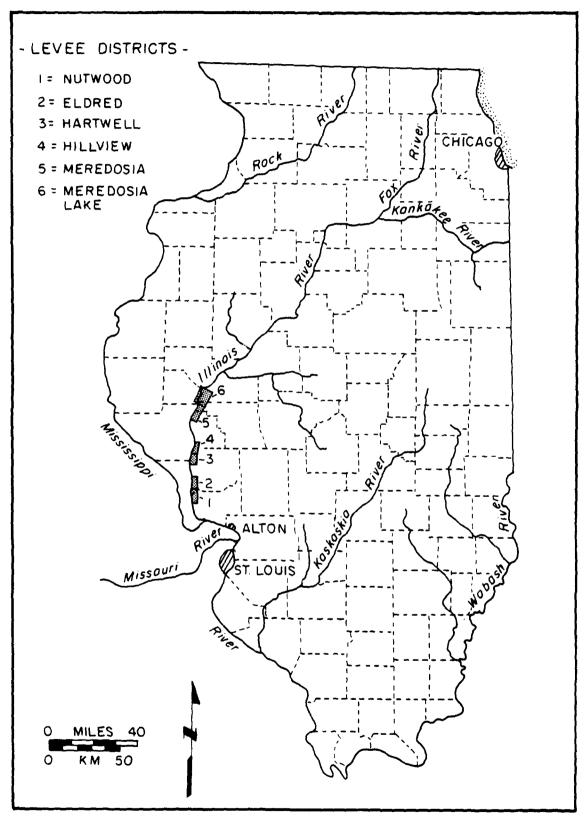


Figure 1. Location of the Meredosia Village and Meredosia Lake Levee and Drainage Districts, Scott, Morgan and Cass Counties, Illinois.

bounded by canalized Coon Run to the south and southeast, and by levees on Willow Creek to the north. To the west are Illinois River backwaters, most notably Smith Lake and the southern extent of Meredosia Lake, and the Illinois River by the town of Meredosia (Figure 2). Valley margin bluffs form the eastern boundary of the northern half of the district and are 200-300 km east of Coon Run in the southern half. The Meredosia Village Levee and Drainage District spans Illinois River miles 67.0 to 72.9.

Southern and northern boundaries on the Meredosia Lake Levee and Drainage District are levees of Willow Creek and Indian Creek respectively (Figure 3). To the west is Meredosia Lake. The eastern boundary is primarily state Highway 100. The Meredosia Lake Levee and Drainage District is between Illinois River miles 72.9 and 79.0.

At Willow Creek, the Illinois Valley is 13 km wide. To the south it gradually tapers to 5 km at its mouth. Immediately north of Willow Creek, it abruptly widens to over 16 km. The Illinois River hugs the western valley margin for its first 61 river miles, but uncharacteristically diverts up to 7.5 km away from the western bluffline at the latitude of the Meredosia Districts.

FIELD AND LABORATORY METHODS

To reconstruct the three dimensional Holocene valley structure in the Meredosia Village and Meredosia Lake Levee and Drainage Districts, coring was a necessity. One hundred twenty-seven solid cores 6.4 cm (2.5 in) or 8.9 cm (3.5 in) in diameter were extracted with a trailer mounted Giddings hydraulic soil probe. Additional sampling, depending upon sediment type, was accomplished with a 5.1 cm (2 in) flight auger.

The Giddings machine retrieves a largely undisturbed solid core by hydraulically pushing a hollow 1.25 meter (4 ft) core barrel into the ground. When the tube is retracted, the sediment/soil core is gently retained within the tube by friction at the cutting bit until shaken out the top of the core barrel by the operator. A continuous core is obtained by returning repeatedly to the same hole. The machine cannot

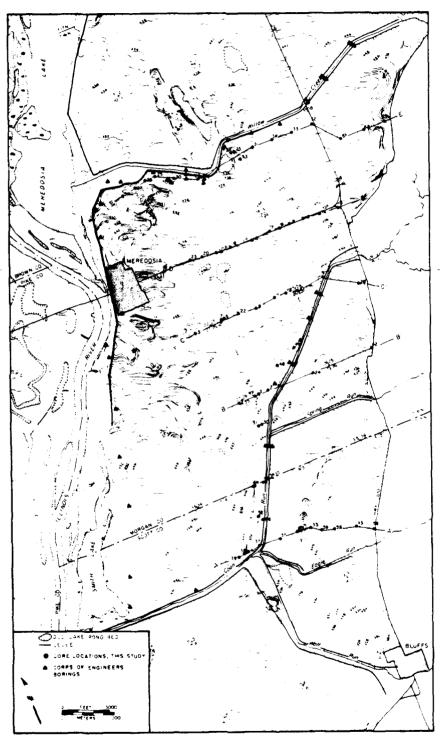


Figure 2. Location of core holes and cross sections, Meredosia Village District.

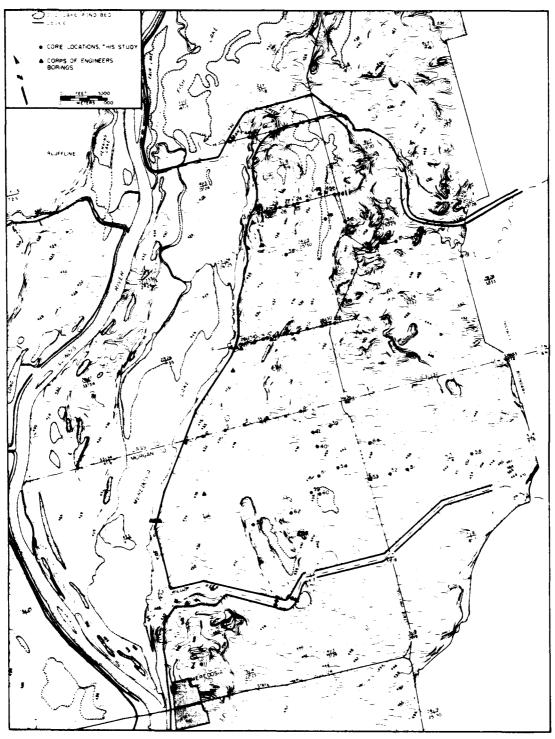


Figure 3. Location of core holes and cross sections, Meredosia Lake District.

penetrate gravels and some sands, nor can it retrieve saturated sediments not sufficiently cohesive to hold an open hole while the tube is retracted and being emptied. The latter condition was not a problem and most cores were terminated due to refusal on pebbly sand or sand.

After coring, a limited surface survey for archeological material was conducted within approximately 6 m (20 ft) of the core hole. The purpose of the surface survey was to determine presence or absence of archeological sites. The surface survey was not intended to determine specific parameters of any site discovered, and only diagnostic or unique material was to be collected.

Evaluation of potential sediment/soil core hole locations necessitated consideration of the following aims: 1) construction of valley cross-sections; 2) identification of subsurface sediments and sedimentary relationships; 3) tracing of terraces and deposits of known age and origin; and 4) sampling of a variety of soil types and floodplain geomorphic features. Fifty percent of the cores in the Meredosia Levee and Drainage Districts were required to be taken within a corridor paralleling the main and lateral levees (see Scope of Work, Appendix D). Crop cover and problems with obtaining access necessarily restricted coring in some preferred locations. Core locations were selected with the aid of black and white, and color aerial photographs, topographic maps, soil series maps and information obtained from preceeding cores. Core hole and cross-section locations are indicated on Figures 2 and 3 and listed with reference to the cadastral system in Table 1. Each core was examined in the field, briefly described, and wrapped in plastic wrap and aluminum foil for transport. More detailed descriptions were performed under uniform conditions in the field laboratory using standard USDA soil terminology (Soil Survey Staff, 1975). Because of time limitations, only depth, interval, color (moist Munsell), texture, structure and boundary were described. Although developed primarily for till and loess deposits, standard weathering zone terminology (Hallberg, Fenton and Miller, 1978) was useful in describing carbonates and oxidation state (see Appendix A for an explanation of the terms "oxidized", "deoxidized", and "unoxidized"). Engineering textural descriptions (U.S. Army Engineer

Table 1. Core Location, Landscape Position, and Associated SCS Soil, Meredosta Village and Meredosia Lake Districts.

Core	Location	Landscape Position	Elevation (m) (ft	.10a (ft.)	Mapped Soil Saries	Core Depth
MC-01	SE1/4 SW1/4 Sec26 T16N	distal alluvial fan	134.1	04	Dupo silt loss	08.4
MLC-02	SE1/4 SW1/4 Sec26 T16N	Bug Island channel	133.8	₩39	Ambraw clay loam	6.00
MLC-03	SW1/4 SW1/4 Sec26 T16M	Bug Island channel	134.1	O# #	Ambras clay loam	9 .00
MI.C-04	NE1/4 NE1/4 Sec34 T15N	Bluffs terrace	134.7	2 7	Hoopeston sandy loss	4.23
MC-05	NE1/4 NE1/4 Sec27 T16M	Bluffs terrace	34.4	- 7	doopeston sandy loam	08.°
MLC-06	SH1/4 SH1/4 Sec23 T16N	Bug Island channel	134.1	0 7 7	Darwin silty clay	3.60
MC-01	SW1/4 SW1/4 Sec23 T16M	Bluffs terrace (edge)	134.7	745	LaHogue sandy loss	5.20
MLC-08	NW1/4 NR1/4 Sec26 T16M		135.9	911	Littleton silt loam	4.25
MCC-09	SE1/4 SW1/4 Sec24 T16M	medial alluvial fan	139.0	£26	Dupo silt loam	8.15
MLC-10	NW1/4 NW1/4 Sec26 T16M	medial alluvial fan	138.1	453	Dupo silt loam	7.80
MLC-11	SE1/4 SE1/4 Sec23 T16N	medial alluvial fan	136.9	644	Dupo silt loam	7.20
MCC-12	SE1/4 SE1/4 Sec23 T16N	medial alluvial fan	137.5	451	Littleton silt loam	8.00
MLC-13	SE1/4 NE1/4 Sec24 T16N	medial alluvial fan	135.6	445	Worthen ilt loam	6.08
MCC-14	SW1/4 NE1/4 Sec24 T16N	medial alluvial fan	138.4	454	Littleton silt loam	7.40
MLC-15	NE1/4 NW1/4 Sec24 T16M	medial alluvial fan	137.8	452	Littleton silt loam	6.95
MLC-16	NW1/4 NE1/4 Sec23 T16N	distal alluvial fan	135.0	£44	Worthen silt loam	9.80
MLC-17	NW1/4 NW1/4 Sec24 T16N	medial alluvial fan	135.0	443	Worthen silt loam	5.30
MLC-18	NW1/4 NW1/4 Sec24 T16N	medial alluvial fan	138.1	453	Worthen silt loam	7.70
MLC-19	NW1/4 Sec24	medial alluvial fan	136.9	611	Worthen silt loam	7.20
MLC-20	SW1/4 NE1/4 NW1/4 Sec23 T16N R13W	Bug Island channel	134.4	- 44	LaHogue sandy loam	8.00
MLC-21	SH1/4 NE1/4 NW1/4 Sec23 T16N R13W	distal alluvial fan/				
		Bug Island channel	134.7	7442	Worthen silt loam	
MLC-22	SW1/4 SE1/4 SW1/4 Sec23 T16N R13W	distal alluvial fan/				
		Bug Island channel	134.7	442	LaHogue sandy loam	
MLC-23	SW1/4 NW1/4 NW1/4 Sec23 T16N R13W	Bluffs terrace	134.7	747	LaHogue sandy loam	3.20
MLC-24	SE1/4 SE1/4 Sec26 T16N	medial alluvial fan	134.7	244	Littleton silt loam	5.50
MLC-25	NE1/4 NE1/4 NE1/4 Sec15 T16M B13W	Bug Island channel	132.3	474	Beaucoup silty clay loam	90.9
HLC-26	NE1/4 NE1/4 Sec15 T16M	Bluffs terrace	134.7	4 2 2	Alvin fine sandy loam	3.20
MLC-27	NE1/4 NE1/4 Sec15 T16N	Bath Terrace	135.3	1111	Plainfield loamy fine sand	2.84
MLC-28	MH1/4 NE1/4 Sec25 T16N	medial alluvial fan	190.8	46.2	Worthan silt loam	0.10
MI.C-29	NEI/4 NH1/4 Sec14 T16N	Bug Island channel	133.2	1137	Tice atity clay load	9
M.C-30	NE1/4 NW1/4 Sec14 T16N	Bug Island channel	132.3	767	Darwin stity clay	3.00
MLC-31	NE1/4 NW1/4 Sec13 T16N	distal alluvial fan/	,	;		;
		Bug Island channel	134.1	0111	Beaucoup silty clay loam	9.00
MLC-32	SE1/4 NE1/4 NE1/4 Sec13 T16N R13W	distal alluvial fan	134.4	443	Beaucoup silty clay loam	7.80
MLC-33	NE1/4 Sec13	distal alluvial fan	134.1	011	Beaucoup silty clay loam	3.30
MLC-34	NW1/4 Sec13 T16N	Bug Island channel	134.1	0111	Beaucoup silty clay loam	5.80
MLC-35	NW1/4 NW1/4 Sec13	sand dune	134.7	7175	Sparta loamy sand	6.00
MLC-36	NE1/4 NE1/4 Sec14 T16N	Bath Terrace	135.3	11 11 11	Sparta loamy sand	2.40
MLC-37	SE1/4 NW1/4 Sec 4 T15N	Bug Island channel	132.9	136	Wakeland silt loam	4 .80
MLC-38	SW1/4 NW1/4 Sec 4 T15N	Bath Terrace	135.3	1111	Sparta loamy sand	1.70
MLC-39	SW1/4 NW1/4 Sec 4	Bath Terrace	135.6	445	Sparta loamy sand	1.80
MLC-40	SE1/4 NW1/4 Sec 4 T15N	W. edge of Bug Island channel	132.9	436	Ambraw clay loam	1.94
MLC-41	SW1/4 NE1/4 Sec23 T16N	medial alluvial fan	136.2	Ltit	Worthen silt loam	7.20
MLC-42	SE1/4 SW1/4 Sec25 T16N	medial alluvial fan	139.0	954	Littleton silt loam	7.20
MLC-43	NW1/4 3E1/4 Sec 3 T15N	medial alluvial fan	142.3	194	Worthen silt loam	10.15
MLC-44	NE1/4 NW1/4 Sec 4 T15N	Bath Terrace	135.3	7 1 1	Sparta loamy sand	1.50
MLC-45	NE1/4 NW1/4 Sec 4	Bug Island channel	132.9	1 3e	Wakeland silt loam	3.50
MLC-46	NE174 SE174 NW174 Sec 4 T15N R13W	Bug Island channel	139.9	436	Wakeland silt loam	7.80

Table 1 (continued)

မှ ႏ၁၁	Location	Landscape Position	Eleva	Elevation	Mapped Soil Series	Core Depth
			(B)	(rt.)		
	17 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		đ	4		
1 C - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 4 - 7 - 1 - 1 - 7 -	1011	Dining Cerrace	- 74.	V 4	noopeston sandy loss	7.20
בין בין בין בין	MOIT 02000 1/100 1/100	Ciates essuants sen	135.5	† 2 † 2 † 2	Total attended	03.7
PE-12	ME1/4 3E1/4 36C20 110E	George Alluvial Lan		7 (7	and still togeth	00.0
MLC-50	281/4 NW1/4 Sec35 1108	and Island channel	133.5	0 0	Ambray Clay tone	02.7
16-51	1011 CEO95 b/122 b/125	Bluffs terrace (edge)	1.54.1) ;	Orio sandy tosa	90.7
MLC-52	MCLI + Deg +/LBS +/LBS		134.7	7	Sparts loamy sand	06.1
MLC-53	SW1/4 NW1/4 Sec 3 T16#	sand dune	134.7	442	Sparta loamy sand	. 80
MLC-54	NE1/4 NW1/4 Sec 5 T16M	Bath Terrace	136.9	611	Plainfield sand	1.80
MC55	ME174 ME174 SE174 Sec 4 7158 R13E	distal alluvial fan	136.2	244	Worthen silt loam	5.30
MI.C56	NET / SE1/4 SE1/4 Sec 3 T154	medial alluvial fan	137.2	450	Worthen silt loam	04.6
MLC-57	ME1/4 SW1/4 Sec & T15K	Bug Island channel	132.0	924	Duno stit loam	7.20
E C PA	NU1/8 SR1/8 Sec 3 T15N	Anex alluctal fan	8 441	175	Horthen stift loss	12.30
	MALE 300 1/100 1/100		6 96 9		101 1101 0110 1011	
FL-29	MC-1 - Dec -/-20 -/-20	TETATION TO THE COLUMN TO THE	130.6	* (Littleton sile total	
MLC-50	NWI/4 SE1/4 Sec 4 1158	Bug Island channel (edge)	132.3	134	Landes fine sandy loam	00.4
-0-17H	MALL SECTOR SECTOR TORK	medial alluvial ran	5.5	* * *	Coffeen silt loam	0.00
MLC-62	NW1/4 SE1/4 Sec18 T16N	medial alluvial fan	135.6	445	Dupo silt loam	9.00
MLC-63	NW1/4 NE1/4 SE1/4 Seci8 T16M R12W	medial alluvial fan	190.2	09#	Worthen silt loam	6.80
0	March Service Hyants Hyants		•	yr q		9
חדר-סו	SE1/4 SW1/4 Sec30 11/N	aug rarand channel	132.9	97	Amoray clay loam	00.4
DCC-05	SW1/4 SW1/4 Sec36 T17N	dune on Bath Terrace edge	133.5	1,38	Sparts loamy sand	6.80
DCC-03	SW1/4 SE1/4 Sec35 T17N	Bug Island channel	132.6	435	Ambraw clay loam	6.90
DLC-04	SH1/4 SW1/4 Sec31 T17N	dune on Bath Terrace edge	132.9	436	Ambraw clay loam	6.75
DCC-05	SH1/#	Bug Island channel	132.3	# 2 #	Tice silty clay loam	5.50
DLC-06	SW1/4	relict Illinois River				
		natural levee	132.3	434	Ambraw clay loam	
DTC-01	SW1/4 SW1/4 SW1/4 Sec35 T17N R13W	relict Illinois River				
		natural levee	133.2	437	Dickenson fine sandy loam	9.60
DFC-08	SE1/4 SE1/4 SW1/4 Sec36 T17N R13W	Bluffs terrace(?)	134.7	244	Sparta loamy sand	6.00
60-07a	SE1/4 Sec26 T17N	Bug Island channel	131.1	430	Ambraw clay loam	6.30
DLC-10	SW1/4 SW1/4 Sec25 T17N	Bug Island channel	132.0	433	Dickenson fine sandy loam	5.60
DLC-11	SE1/4 SW1/4 SW1/4 Sec25 T17N R13W	Bug Island channel	132.9	436	Dickenson fine sandy loam	5.75
DLC-12	SW1/4 Sec25 T17N	Bug Island channel	132.0	433	Dickenson fine sandy loam	5.50
DLC-13	SE1/4 SW1/4	Bug Island channel	131.1	430	Beaucoup silty clay loam	4.50
DLC-14	SE1/4 SW1/4	lower slope of Bluffs			•	
		terrace scarp	132.9	436	Plainfield loamy sand	
DLC-15	NW1/4 NW1/4 NE1/4 Sec36 T17N R13W	dune on Bluffs terrace	136.2	447	Plainfield loamy sand	5.50
DLC-16	NW1/4 NW1/4 NE1/4 Sec36 T17N R13W	Bug Island channel	134.7	442	Plainfield loamy sand	7.00
DLC-17	T17N	Indian Creek floodplain	135.3	\$ † †	Sawmill silty clay loam	9.40
DEC-18	SE1/4 NW1/4 Sec30	Indian Creek floodplain	135.3	# # #	Comfrey clay loam	9.60
DLC-19	NE1/4 NW1/4 SE1/4 Sec29 T17N R12W	Indian Creek floodplain	136.6	877	Sparta loamy sand	7.60
DLC-20	NE1/4 NE1/4 NE1/4 Sec36 T17N R13W	Bug Island channel	133.5	438	Raddle silt loam	4.80
DLC-21	SW1/4 SE1/4 Sec25 T17N	Bug Island channel	134.1	0 † †	Raddle silt loam	9.00
DLC-22	NWI/4 NWI/4 NWI/4 Sec31 TITN RIZW	Bath Terrace scarp	134.4	111	Watseka loamy sand	7.20
DEC-23	T16N	Bluffs Terrace (?)	134.7	7442	Watseka loamy sand	90.4
DLC-24	NW1/4 NW1/4 SE1/4 Sec19 T17N R12W	Bug Island channel	132.3	† 2†	Carwin silty clay	7.20
DLC-25	SE1/4 SE1/4 NE1/4 Sec24 T17N R13W	Bluffs terrace	134.7	7 17 5	Dickenson fine sandy loam	7.20
DLC-26	SW174 SE174 NE174 Sec24 T17N R13W	Bluffs terrace	133.5	438	Littleton silt loam	9.00
DLC-27	SE1/4 NE1/4 Sec24 T17N	Bluffs terrace	134.1	011	Raddle silt loam	7.00
DLC-28	SW1/4 SE1/4 NE1/4 Sec24 T17N R13W	dune on Bluffs terrace	135.0	£ † †	Dickenson fine sandy loam	7.20

Table 1 (continued)

				(ft.)		
67 - 270	WELL WILL SELVE SECOND WITH WILL	Bluffs terrace	134.1	0# #	Orio logs	6.00
DLC-30	SH1/4 h21/4 Sec24	dune on Bluffs terrace	135.0	977	Plainfield loamy sand	7.20
C-31	NW1/4 SW1/4 Seci8 T17N	Bluffs terrace	134.4	4 4	Alvin fine sandy loam	8.80
DLC-32	NW1/4 SW1/4 Sec18 T17N	Bug Island channel	132.6	435	Beaucoup silty clay loam	7.20
DLC-33	NE1/4 NE1/4 Sec18	Bug Island channel	31.4	#31	Beaucoup silty clay loam	7.80
DLC-34	NE1/4 NE1/4 SW1/4 Sec18 T17N R12H	Bug Island channel	132.3	#3#	Beaucoup stity clay loam	9.30
LC-35	NW1/4	dune on Bluffs terrace	137.5	451	Plainfield loamy sand	4.20
DE-770	NEI/4 NEI/4 NEI/4 Sec 5 T16N R12H	medial alluvial fan	140.2	091	Plainfield loamy sand	9.00
LC-37	NW1/4 NE1/4 SE1/4 Sect3 T17N R13W	dune on Bluffs terrace	135.3	######################################	Plainfield loamy sand	7.20
DLC-38	NE1/4 NW1/4 NE1/4 Sec25 T17N R13W	Bug Island channel	132.6	435	Raddle silt loam	7.20
DLC-39	SE1/4 NW1/4 NE1/4 Sec 1 T16M R13W	Indian Creek alluvium	135.9	91 1	Worthen silt loam	5.50
DLC-40	NW1/4 SW1/4 SE1/4 Sec 1 T16W R13W	Indian Creek alluvium	134.1	011	Beaucoup slity clay loam	7.20
DLC-41	SW1/4 NE1/4	dune on Bluffs terrace	135.6	445	Plainfield loamy sand	4.80
DLC-42	SE1/4 SE1/4 NE1/4 Sec24 T17N N13W	lower slope of Bluffs				
		terrace scarp	132.3	# **	Beardstown loam	
01.0-43	NEI/4 NEI/4 SE1/4 Sec13 T17N B138	Indian Creek floodplain	131.7	432	Dockery silt loam	9.30
tt-273	NE1/4 NW1/4 SE1/4 Sec13 T17N R13W	Indian Creek floodplain	131.7	4 32	Dockery silt loam	6.50
DLC-45		Bug Island channel	1,11.7	25 4	Darwin silty clay	₩.80
DLC-46	SE1/4 NW1/4 Sec19 T17N	Bluffs terrace	134.1	077	Sparts loamy sand	4.80
DLC-47	SE1/4 SW1/4 Sec19 T17N	Eug Island channel	131.7	4 32	Darwin silty clay	3.00
DLC-48	SE1/4 NW1/4 Sec19 T17N	Bug Island channel	131.7	4 32	Darwin silty clay	00.9
01.C-49	SE1/4 NE1/4 Sec30 T17N	dune on Bath (?) Terrace	136.0	10 1 17	Plainfield loamy sand	7.20
05-27a	NW1/4 NE1/4 Sec11 T16N	dune on Bluff's terrace	135.6	4+5	Sparta loamy sand	7.70
DLC-51	SE1/4 SW1/4 Sec 6	dune on Bluffs terrace	135.3	# # #	Sparts loamy sand	9.00
.c-52	SW1/4 SE1/4 SW1/4 Sec 6 T16N R12W	Indian Creek alluvium	135.3	777	Worthen silt loam	4.60
DLC-53	NW1/4 NW1/4 Sec 7 T17N	Indian Greek alluvium	135.3	£ 4.3	Tice silty clay loam	9.00
DLC-54	SW1/4 SE1/4 Sec 1 T16N	Indian Creek alluvium	134.4		Worthen silt loam	4.80
C-55	NW1/4 NW1/4 Sec 8 T16N	distal alluvial fan	137.5	451	Worthen silt loam	9.00
DLC-56	SE174 SW174 Sec19 T17N	Bluffs terrale	135.6	445	Plainfield loamy sand	5.90
CLC-57	NE1/4 NW1/4 Sec30 T17N	Bath Terrace	139.9	459	Plainfield loamy sand	5.70
DLC-58	SW1/4 NW1/4 Sec12 T16N	dune on Bluffs terrace	135.9	Q# #	Sparts loamy sand	9.05
DLC-59	SE1/4 SW1/4 Sec 1 T16N	Indian Greek alluvium	133.8	∱ \$\$	Tice stity clay loam	8.40
OF-07	NE1/4 NE1/4 NW1/4 Sec12 T16N F13W	Bug Island channel				
		(old ted of Blue Pond)	132.6	4 35	Ambraw clay loam	
DLC-61	SE1/4 SW1/4 Sec 1 T16N	Bluffs terrace	134.4	- 77	Sparta loamy sand	9.00
DLC-62	NW1/4 HW1/4 Sec12 T16N	Bug Island channel	133.5	4 36	Ambraw clay loam	9.00
DLC-63	SW1/8 NW1/4 Sec29	dune on Bluffs terrace	137.5	451	Plainfield loamy sand	8.40
DLC-64	SE174 NE174 SE174 Sec 6 T16N R124	District the state of the state	0 36.1	777		6

Waterways Experiment Station, 1960) for major units were also recorded per request in the Scope of Work (Appendix D). Any special features or inclusions (organic matter, charcoal, gastropod and bivalve shells, krotovina, lithic debris) were noted. Various units were sampled, air dried and stored for future analyses of particle size, clay and sand mineralogy, carbonates, C-14 and identification of micro- and macro-botanical organic matter. Core descriptions are presented in Appendix A. Additional subsurface data were obtained from the Corps of Engineers, St. Louis District, Illinois Department of Transportation, and Illinois River maps (Woermann, 1904).

Although stratigraphic data derived from cores provides the primary data base, laboratory analyses were deemed necessary to begin to characterize lithostratigraphic units and verify field descriptions. Methods and procedures of chemical and physical analyses employed are considered standard for the evaluation of unconsolidated Quaternary sediments and soils in the midwest (Hallberg, 1978; 1980). Particle size analyses were completed using the method of Kilmer and Alexander (1949) as modified by Walter et al. (1978). Calcite and dolomite were determined gasometrically using the Chittick apparatus (Dreimanis, 1962). Values were calculated using the following empirical equations for the graphed lines of Dreimanis, as reported by Walter and Hallberg (1980):

```
$ calcite = F (0.232)
$ dolomite = E (0.223) + 0.3.
```

The values E and F are corrected volumetric readings of CO₂ for dolomite and calcite respectively. Chemical and physical data are tabulated in Appendix B.

Cross-sections and geomorphologic maps (see below) were constructed and interpreted by utilizing both new core hole descriptions and other previous boring records, black and white, and color aerial photographs, color infrared aerial imagery, topographic maps and soils data. Landowner interviews also provided valuable information on subsurface sediments as most farmers have excavated deep wells or have sunk sand points

on their property.

Because of the complex nature of fluvial sediments and the sampling intervals, cross-sections are generalized to some extent. Nevertheless, a clear stratigraphic picture emerges. All elevations are based on Illinois River floodplain topographic maps with 2 ft contour intervals (U.S. War Department, 1944) with vertical datum plane referred to 1929 General Adjustment USC & GS (Mean Sea Level). Spoil from drainage ditch construction since 1944 has been included in core descriptions, but was omitted and adjusted for in cross-sections.

MEREDOSIA VILLAGE AND MEREDOSIA LAKE GEOMORPHOLOGY

The Meredosia Districts differ from previously studied districts (Figure 1) because they encompass several geomorphic surfaces and features which are not represented in the southern half of the lower Illinois valley. Two previously defined terraces, the Bath Terrace (Wanless, 1957; Styles, 1984; Hajic, 1983b) and Bluffs Terrace (Hajic, 1983b; Styles, 1984) in part border unburied remnants of the Bug Island Paleochannel, a broad, straight Illinois River paleochannel (Figures 4 and 5). Also represented are extensive alluvial fans and a broad range of alluvial features associated with tributary creeks which have traversed much of the Bug Island Paleochannel after abandonment by the Illinois River.

The Bath Terrace has almost a continuous cover of eolian dunes attaining elevations over 143 m (470 ft), but more commonly ranging between 139 m (455 ft) and 142 m (465 ft). Where dunes are absent, the sandy surface is at about 137 m (450 ft). One large Bath remnant extends the full length of the western side of the Meredosia Village District while two large remnants are preserved in the Meredosia Lake District.

Less obvious is the Bluffs Terrace which also has a primarily sandy surface, but may on occasion have a silt loam surface. It is found at elevations ranging from 133.5 m (438 ft) to 134.7 m (442 ft). The Bluffs Terrace sometimes has low eclian dunes or reworked dunes that may reach elevations of about 137.8 m (452 ft). Remnants are preserved adjacent to the east side of Bath Terrace remnants in both districts and as



Figure 4. Geomorphology of the Meredosia Village District.



Figure 5. Geomorphology of the Meredosia Lake District.

isolated remnants in the Bug Island Paleochannel. The latter are relict channel bars or islands and generally have low eolian dunes associated with them. The boundary between the Bath and Bluffs terrace is at times indistinct, but generally mapped where large dunes occur on the Bath Terrace. North of the Meredosia Lake District and just south of Beardstown the Bluffs Terrace slopes up to and apparently merges with the Bath Terrace. The close association at the Bluffs terrace with the Bug Island Paleochannel suggests the Bluffs may be a related floodplain surface.

The Bug Island Paleochannel derives its name from one of the midchannel bars/islands (now considered Bluffs Terrace remnants) that is approximately 4 km south of the triple junction of canalized Coon, Eagle and Wolf Run (Styles, 1984). One reach of the paleochannel is located in the two districts and extends their lengths (Figures 4 and 5). In the Meredosia Village District, the paleochannel is located between the eastern bluffline and Bath and Bluffs remnants. Terrace remnants bound either side of the paleochannel in the Meredosia Lake District (Figure 5). On high altitude aerial photographs, the paleochannel appears at least 8 to 10 times the width of the present Illinois River channel.

In the Meredosia Village District, most of the Bug Island Paleochannel has been filled by a broad apron of coalescing yet distinct alluvial fans. Major fans occur at the mouths of Wolf Run, Eagle Run, Spring Run, and Coon Run. The westward extent of Eagle Run fan has been restricted by a Bluffs terrace remnant. Tributary creek channel traces on the fans exhibit both braided and meandering patterns. At times, the larger creeks extended beyond their fans and eventually terminated in small splays and distributary networks probably in shallow lakes, in the Bug Island Paleochannel.

In the Meredosia Lake Levee and Drainage District, much of the paleochannel has been modified by fluctuating coarses of Willow Creek and Indian Creek. Indian Creek is now diverted and forms the northern district boundary. In past times it flowed south on the east side of a large Bath Terrace remnant, then west and to the north of a large channel

bar/island (Figure 5). Meandering channel traces of Indian Creek are clear in high altitude aerial photographs and may have reworked some Bluffs terrace remnant margins east of Highway 100 (Figure 5). Willow Creek has been similarly active, reworking much of the Bug Island Paleochannel between canalized Willow Creek and the Cass-Morgan county line. The resulting landscape in this area is a low hummocky topography of infilled channels, low natural levees and bars.

Along the eastern margin of Meredosia Lake is either a natural levee remnant deposited by a former Illinois River or an eroded Bluffs terrace remanant (Figure 5).

Major soils (those formed over largest areas) (Figures 6 and 7; Table 2) on the Bath Terrace are the Plainfield sand and Sparta loamy sand. These reflect the largely dune mantled terrace surface. While sharing some soil similarities, the Bluffs Terrace also has Keomah silt loam, Hoopeston sandy loam, Orio silt loam, and even some Ambraw clay loam in depressional areas. Major soils in the Bug Island channel, where not buried by upland derived sediments, include Darwin silty clay, Beaucoup silty clay loam and Ambraw clay loam. Worthen and Littleton (Table 2) silt loams dominate the proximal and medial alluvial fans and reflect the upland origin of the sediment. Dupo silt loam is mapped on distal fans where upland derived sediments are thin and underlying Bug Island Paleochannel sediments may be incorporated in the lower soil profile. Grouping the soils by texture (Table 2) illustrates a close correspondence to the geomorphology of the districts (Figures 6 and 7).

STRATIGRAPHY

Eight lithostratigraphic units were defined on physical criteria observed in cores. Eight valley cross-sections illustrate stratigraphic relationships of these units and shallow subsurface valley structure in the Meredosia Village and Meredosia Lake Levee and Drainage Districts (Figures 8-15).

Unit 1. This unit consists of oxidized and leached loamy fine sand to pebbly medium and coarse sand with depth. In the surface soil, tex-



Figure 6. General soil groupings by texture within the Meredosia Village District.



Figure 7. General soil groupings by texture within the Meredosia Lake District.

Table 2. Soils Groups by Texture.

<u>Texture</u>	Soil Series
clay, clay loam, silty clay loam,	Houghton
silty clay, muck	Palms
	Ambraw
	Beaucoup
	Sawmill
	Tice
	Darwin
silt loam	Arenzville
	Dupo
	Keomah
	Littleton
	0rio
	Raddle
	Tallula
	Thorp
	Wagner
	Worthen
loam	LaHogue
	Medway
	Ross
sand, loamy sand, sandy loam	Watseka
	Sparta
	Hoopeston
	0narga
	Gilford
	Plainfield
	Bloomfield
	Morocco

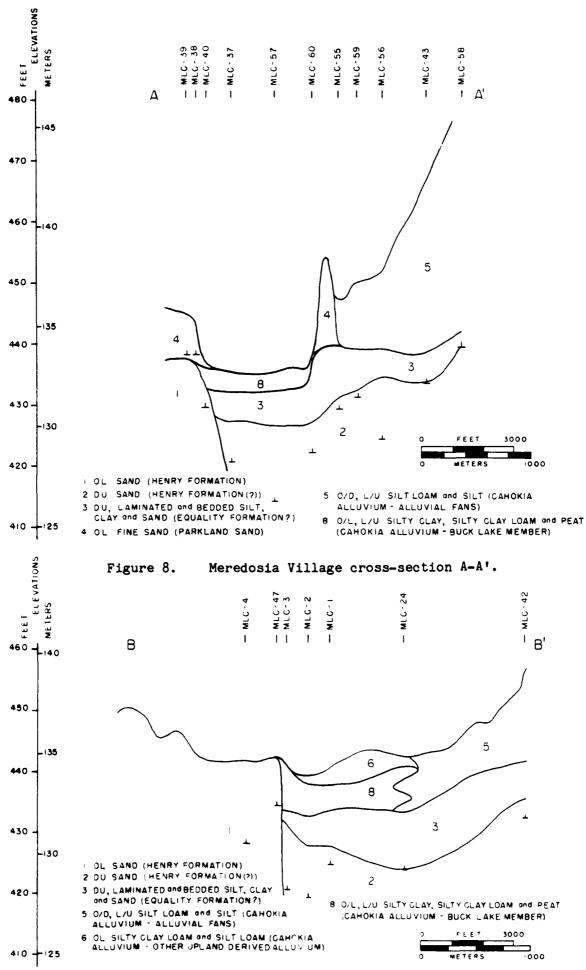


Figure 9. Meredosia Village cross-section B-B'.

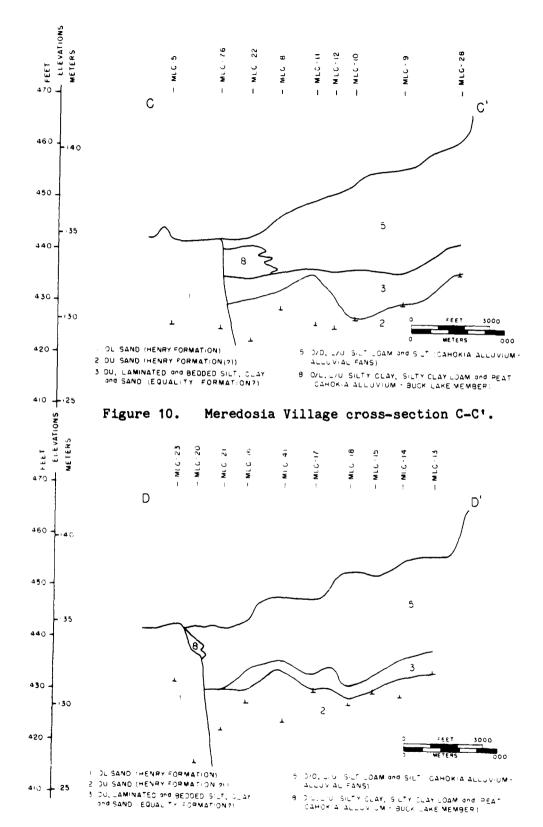


Figure 11. Meredosia Village cross-section D-D'.

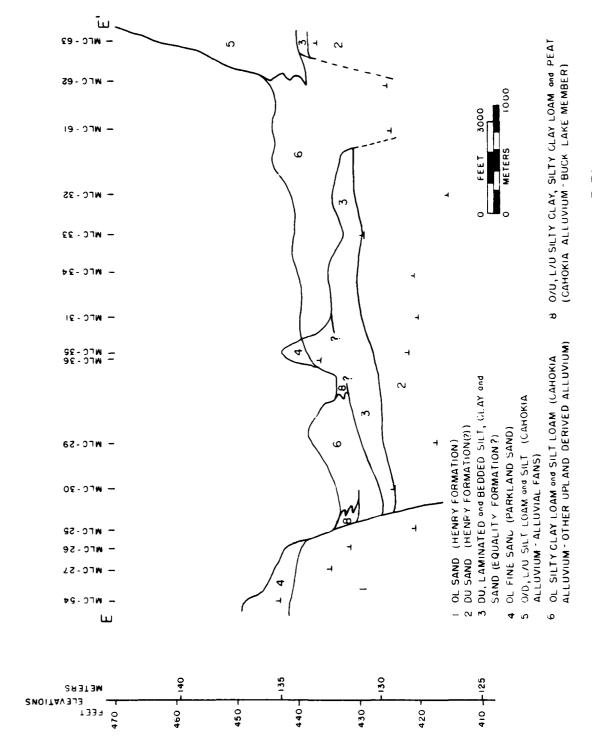
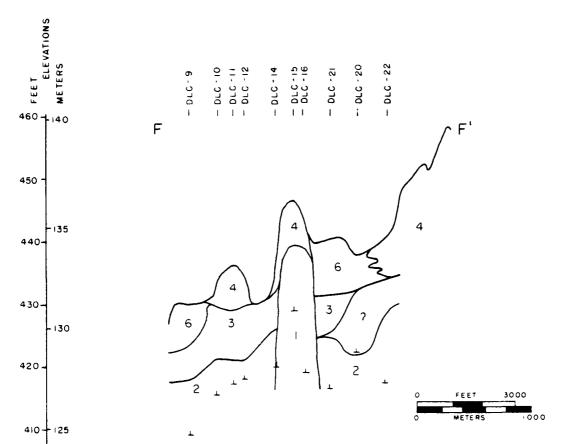


Figure 12. Meredosia Village cross-section E-E'.



- I OL SAND (HENRY FORMATION)
- 2 DU SAND (HENRY FORMATION (7))
- 3 DU, LAMINATED and BEDDED SILT, CLAY and SAND (EQUALITY FORMATION?)
- 4 OL FINE SAND (PARKLAND SAND)
 6 OL SILTY CLAY LOAM and SILT LOAM (CAHOKIA
 ALLUVIUM OTHER UPLAND DERIVED ALLUVIUM)

Meredosia Lake cross-section F-F'. Figure 13.

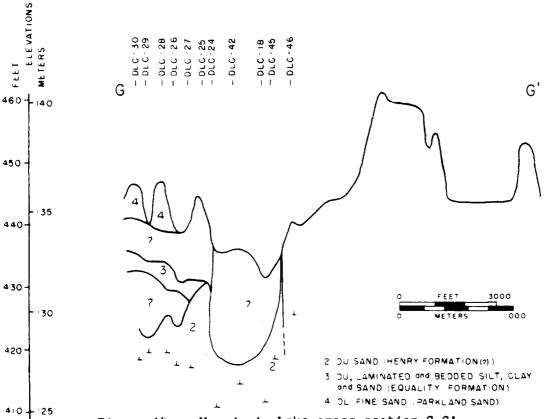


Figure 14. Meredosia Lake cross-section G-G'.

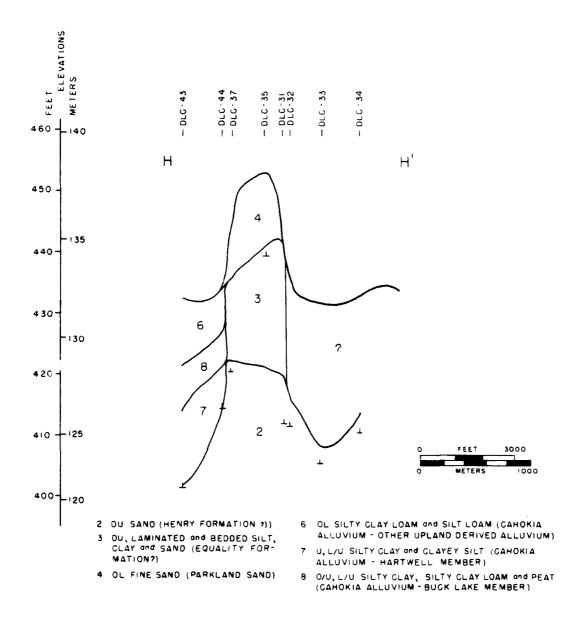


Figure 15. Meredosia Lake cross-section H-H'.

tures may be fine sandy loam and there is weak indication of original stratification. The unit occurs beneath dunes on the Bath Terrace (Figures 8-13). The Bluffs Terrace, when adjacent to the Bath, is also developed on Unit 1. Corps of Engineers boring records indicate this unit to be in excess of 9 m (30 ft) thick. The unit belongs to the Henry Formation (Willman and Frye, 1970) which consists of outwash sand and gravel of Wisconsinan age.

Unit 2. Most cores terminated in this unit and it occurs throughout the Bug Island Paleochannel as a basal unit. Unit 2 consists of deoxidized to unoxidized, unleached fine to medium sand (Figures 8-15). Coarse sand with very fine to fine pebbles occur at depth. The upper meter is most commonly interstratified with laminae and thin beds of deoxidized, unleached, sandy silt to silty clay. The silty laminae are occasionally organic, and may consist entirely of fine pieces of uncarbonized organic matter. The Henry Formation is the closest formaly defined correlate.

Unit 3 is also confined to the Bug Island Paleochannel and overlies Unit 2. The contact is abrupt, but in most cases conformable with Unit 2. Unit 3 consists of interlaminated and interbedded sediments of a wide textural range. The core of the unit is commonly a strongly laminated to thinly bedded silt (Figures 16 and 17). It is generally deoxidized and unleached, but often contains some reddish brown silt strata or clay laminae that are leached or only very slightly effervescent with dilute hydrochloric acid. Commonly underlying the unit is a thin bed of oxidized, unleached or leached fine or medium sand. Fine sand may be interstratified throughout the unit. Overlying the unit core are generally sandy clay loam, loam, or clay loam strata, or strongly laminated silt to silty clay loam. Laminae of fine pieces of uncarbonized organic matter are common both above and below reddish brown strata. Unit 3 was deposited primarily in slackwater or lacustrine environments in the Bug Island Paleochannel with occasional fluvial input. The closest lithostratigraphic correlate formaly defined is the Equality Formation (Willman and Frye, 1970).

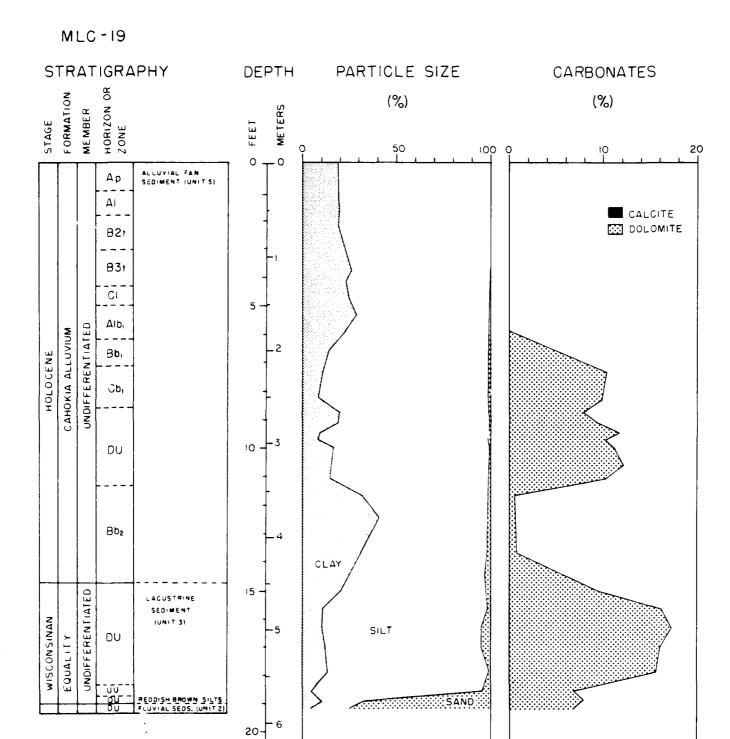


Figure 16. Stratigraphy, particle size and carbonate data for core MLC-19.

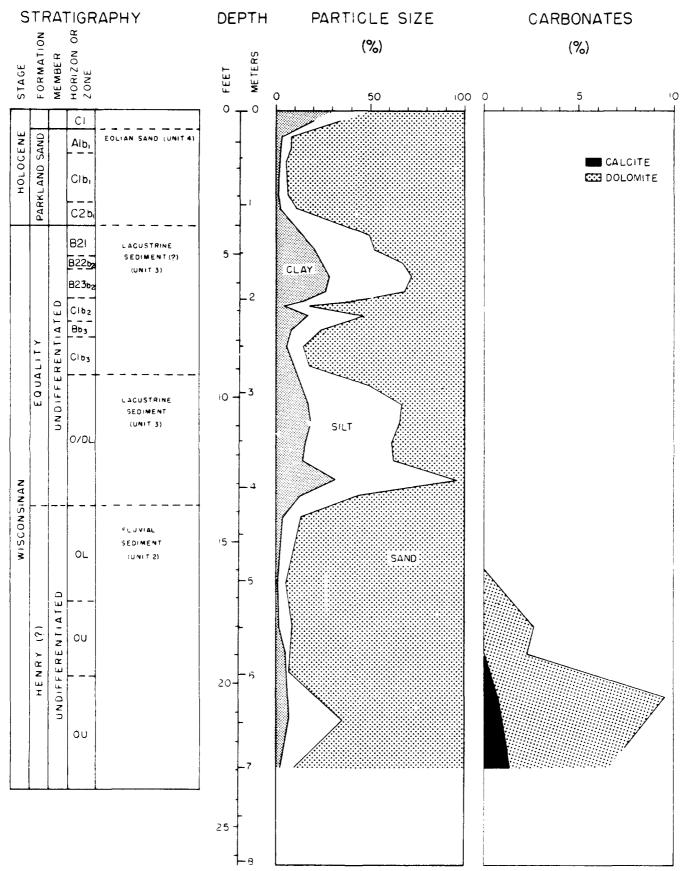


Figure 17. Stratigraphy, particle size and carbonate data for core DLC-28.

Unit 4 is composed of oxidized and leached fine sand of eolian origin (Figure 17). This unit comprises dunes over Unit 1 and less commonly, Unit 3. In only a few instances is there an intervening paleosol, and when present, it is very weakly developed. Unit 4 belongs to the Parkland Sand (Willman and Frye, 1970).

Unit 5 is located along the eastern half of the Meredosia Village District and consists of upland derived silt loam deposited primarily as alluvial fans (Figures 8-12). Colluvial deposits are also mapped as Unit 5. The upper fan deposits are weathered and leached, having oxidized to deoxidized colors. In most fans, one or more tracable huried soils occur. The lower part of Unit 5 is laminated with the distinctness of laminae increasing with depth, particularly where fans are thickest. Well preserved laminae suggest either rapid deposition, or fan delta deposition in standing water. Carbonates also pick up in lower Unit 5 sediment (Figure 16). Also common to the lower part of the unit are beds of silty clay loam which are slightly weathered. Basal fan sediments are conformable with the underlying Unit 3, and sometimes grade down into very strongly laminated deoxidized, unleached, silt and very fine sand. Laterally, Unit 5 interfingers with or buries Unit 8. It also is laterally continous with or buried by Unit 6, and basal fan sediments may be laterally continuous with youngest Unit 3 deposits in the western part of the Bug Island Paleochannel. Unit 5 is currently mapped as part of the Cahokia Alluvium (Willman and Frye, 1970).

Unit 6 consists of oxidized and leached silt loam and silty clay loam largely of upland origin. It occurs most commonly in the Bug Island Paleochannel, especially in the vicinity of abandoned Willow and Indian Creek channels in the northeast part of the Meredosia Village District and southeast part of the Meredosia Lake District (i.e. Figure 12). Unit 6 was deposited by tributary creeks primarily as natural levees, splays and overbank deposits. It overlies Unit 3 and laterally can be interstratified with Units 5 and 8. Unit 6 is part of the Cahokia Alluvium.

Unit 7 is located only in cores DLC-43 and DLC-44 (Figure 14), west

of the western Bath Terrace remnant in the Meredosia Lake District. This unit consists of unoxidized and leached silty clay and clayey silt of slackwater origin. It is probably equivalent to the Hartwell member of the Cahokia Alluvium defined and described in districts to the south (i.e. Hajic, 1983b). Here it is underlain by Unit 2(?) and unconformably overlain by Unit 6.

Unit 8 consists of leached silty clay loam and silty clay which is commonly organic. It is the surface unit in the Bug Island Paleochannel where alluvial fan and tributary creek deposition has not occurred (Figures 8-12, 15). In the southern part of the Meredosia Village district peat and peaty silty clay textures dominate. Here the unit contains abundant gastropods and bivalves, and is calcareous. Unit 8 was deposited in swamps and shallow intermittant lakes in the Bug Island Paleochannel following channel abandonment. It may be interstratified with Units 5 and 6. At least part of Unit 8 may be equivalent to the Buck Lake member of the Cahokia Alluvium defined and described in districts to the south (i.e. Hajic, 1983b).

MEREDOSIA VILLAGE AND MEREDOSIA LAKE DISTRICT ARCHEOLOGY

One previously unrecorded archeological site was documented during the course of this study. The Marlin Winkleman site is located immediately north of core DLC-35 in the northernmost part of the Meredosia Lake District. It occurs just north of a dune on the Bath Terrace. The site consists of a light scatter of chert debris, and no retouched lithics were found.

Eighteen previously recorded sites in Center for American Archeology files occur within the Meredosia Districts (Table 3). The sites range in age from Middle Archaic through Mississippian. They are all associated with the Bluffs Terrace or Bath Terrace or related dunes except the Sunset Beach site located on a probable relict natural levee of the Illinois River.

Table 3. Known Meredosia Village and Meredosia Lake District Archeological Sites, Cultural Affiliation, and Landscape Position.

<u>Site</u>	Cultural Affiliation	Landscape Position
Willow Creek	Late Woodland	Bluffs terrace margin
Roscoe	Archaic, Late Woodland	dune on Bath Terrace
Honey Point	Late Archaic thru Late Woodland	dunes on Bluffs terrace
Shearl	Middle and Late Archaic	<pre>dune on Bluffs terrace(?)</pre>
Sunset Beach	Middle Woodland	relict natural levee(?) of Illinois River, now beach of Meredosia Lake
Wells	Early(?) and Late Woodland	Bluffs Terrace margin
Chute	indeterminate	dune on Bath Terrace
Dawson	Middle Woodland thru Mississippian	Bath Terrace
Meredosia	Middle and Late Woodland	dunes on Bath Terrace
National Starch	Early and Late Woodland	eroded Bath Terrage(?)
Virginia Holding Co.	Late Woodland	Bluff Terrace
Ruthless	indeterminate	Bluffs Terrace
Meadowlark	indeterminate	Bluffs Terraces
North Star	indeterminate	Bluffs Terrace
Small Star	indeterminate	Bluffs Terrace
Eleana	indeterminate	Bluffs Terrace
Hahn	Late Woodland	Bluffs Terrace
Pessina	indeterminate	Bluffs Terrace

Cultural chronology of the lower Illinois River Valley drainage:

Culture Group	Age (B.P.)
Historic	post 650
Mississippian	850- 650
Late Woodland	1500- 850
Middle Woodland	2050-1500
Early Woodland	2800-2050
Late Archaic	4500-2800
Middle Archaic	7000-4500
Early Archaic	9500-7000
Paleo-Indian	11000-9500

GEOMORPHIC, STRATIGRAPHIC, AND ARCHBOLOGICAL CONTEXTUAL RELATIONSHIPS

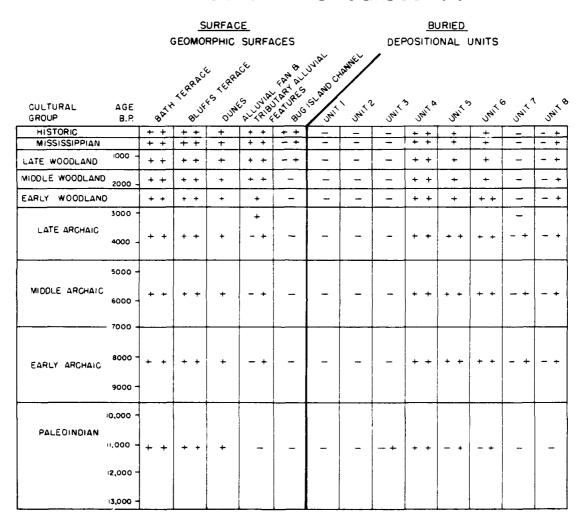
A model for predicting site location potential for both buried and surface manifestations for specific cultural groups in the Meredosia Districts is summarized in Figure 18. The evaluation is based upon the:

1) evolving reconstruction of the lower Illinois Valley landscape history (see Appendix C, this report); 2) three dimensional reconstruction of the Meredosia Districts based upon core stratigraphic data (i.e. the spatial location of lithostratigraphic units within the districts): 3) age and depositional origin of lithostratigraphic units; 4) identification and location of buried surfaces and soils; 5) present geomorphic configuration of the valley, relationships between known archeological sites, geomorphic features and geomorphic surface ages, and relationships between geomorphic surfaces and the age and origin of underlying deposits. While absolute certainty in predictions is unattainable, it is felt Figure 18 represents very close approximations, given the extent of information upon which they are based.

Seven radiocarbon dates from the Bug Island Paleochannel system indicate it was cut prior to about 14,590±240 B.P. (ISGS-1285) (see Appendix C, this report) and was intermittantly active until about 9830±160 B.P. (ISGS-1282). Six of the dates were from lacustrine Unit 3 and fluvial Unit 2 at or near the contact with Unit 3. The next to youngest date is 12,360±240 B.P. (ISGS-1283) from Unit 3 which corresponds with the end of the Deer Plain lake phase in the lower Illinois valley (see Appendix C). The youngest age from Unit 2 is 9830±160 B.P. (ISGS-1282), Core MLC-29 (Figure 12), which indicates intermittent fluvial reactivation of the western side of the Bug Island Paleochannel system from which the dated material was obtained.

The Bath Terrace probably formed when the Bug Island Paleochannel system developed (see Appendix C, this report). The Bluffs Terrace, which consists of several mid-channel bars or islands in the Bug Island Paleochannel and what appears to be reworked or incised Bath Terrace margins, formed when the Bug Island channel was active but before about 9800 B.P. (see Appendix C, this report).

LOCATION AND PRESERVATION POTENTIALS FOR SURFACE AND BURIED ARCHEOLOGICAL SITES: MEREDOSIA VILLAGE AND LAKE DISTRICTS



- NO POTENTIAL - + LOW POTENTIAL

DEPOSITIONAL UNITS

- I OL SAND (HENRY FORMATION)
- 2 DU SAND (HENRY FORMATION?)
- 3 DU, LAMINATED and BEDDED SILT, CLAY and SAND (EQUALITY FORMATION?)
- 4 OL FINE SAND (PARKLAND SAND)
- 5 O/D, L/U SILT LOAM and SILT (CAHOKIA ALLUVIUM ALLUVIAL FANS)

- + MODERATE POTENTIAL
- + + HIGH POTENTIAL
- 6 OL SILTY CLAY LOAM and SILT LOAM (CAHOKIA ALLUVIUM OTHER UPLAND DERIVED ALLUVIUM)
- 7 U, L/U SILTY CLAY and CLAYEY SILT (CAHOKIA ALLUVIUM HARTWELL MEMBER)
- 8 O/U, L/U SHITY CLAY, SHITY CLAY LOAM and PEAT (CAHOKIA ALLUVIUM BUCK LAKE MEMBER)

Figure 18. Location and preservation potentials for surface and buried archeological sites in the Meredosia Village and Meredosia Lake Districts.

Therefore both the Bath Terrace and Bluffs Terrace surfaces were available for occupation to all cultural groups. The underlying sediments of Unit 1 can be practically eliminated from buried site consideration due to antiquity and origin as outwash aggradation. Similarly, sites will probably not be located within Unit 2. This unit represents bed load sand when the Bug Island Paleochannel was an active sluiceway. The interstratified finer units in the top meter probably represent subsequent lacustrine deposits which accumulated with initial channel abandonment or initiation of subsequent valley lake phases. In the Bug Island paleochannel-filling Unit 3 there is only a low potential for encountering Paleo-Indian camp sites. The strongly laminated to thinly bedded unit is primarily lacustrine or slackwater in origin with occasional fluvial input of sands. The unit is found over a range of elevations that parallel the top of Unit 2. Fluctuations of valley lake levels between circa 12,000 B.P. and 10,000 B.P. (see Appendix C, this report) would have resulted in large horizontal shifts of lake shorelines and near shore environments. It is possible that younger Unit 3 surfaces were at times briefly exposed and available for occupation, and thus the low potential.

Dunes in the Meredosia Districts are primarily relict features. Dunes occur on the two sandy terraces and occasionally on Unit 3 silts; no eolian sand bodies were identified in or on alluvial fans. Several dunes encroaching upon the Bug Island Paleochannel from the west are probably due to reactivation as a result of modern farming. Farming may also account for several blowouts on the Bath Terrace. Unit 4 dune sand is considered to have a high potential for containing buried cultural material of all time periods even though the latest dune forming activity was probably shortly after 10,900 B.P. (Appendix C, this report). Burial is possible because of local historic reactivation and the action of soil processes in loose sandy sediment which may vertically move larger objects down the soil profile. Local farmer Henry Likes indicated to us that several decades ago, before intensive deep plowing, archeological sites were abundant in the Meredosia Districts, but now there are noticeably fewer visible sites (personal communication, 1984).

The alluvial fans in the Meredosia District, composed of Unit 5 silt and silt loam, are stratigraphically conformable with the underlying Unit 3. Basal fan sediment is strongly laminated, possibly being deposited in a shallow lacustrine environment, and may be temporally equivalent with youngest Unit 3 deposits along the western margin of the Bug Island Paleochannel. Investigations of other Illinois Valley fans suggest the bulk of fan deposition in the region occurred after circa 8500 B.P. and nearly ceased by about 2000 B.P. with noticably decreased rates since circa 4000 B.P. (Hajic, 1981a; Wiant et al., 1983; Styles, 1984). The preservation of archeological sites in alluvial fan environments is a common occurrence in the Illinois Valley, and the Meredosia fans are accorded a high to moderate potential for all cultural periods. Because of slower depositional rates for the last 4000 years, the potential of Woodland occupations being fan surface manifestations is greater than the Archaic. Nevertheless, over a meter of relatively young alluvial fan deposition (lacking soil development) was recorded in several cores indicating even the youngest occupations can be buried.

Unit 6, which consists of primarily upland derived alluvium deposited as tributary creek overbank deposits is considered to have a moderate to high potential for containing buried archeological components as old as about 9800 B.P., or the latest time the Bug Island Paleochannel could have functioned. Most Unit 6 depositional environments are relatively low energy subsystems and would be conducive to preservation by burial. Much of Unit 6 deposited by tributaries entering the Meredosia Village District probably post-dates about 4000 B.P., when fan surfaces began to stabilize and tributaries incised fan surfaces. Abundant Early and Middle Woodland sites on similar landscape positions and sediment to the south suggest Unit 6 deposition nearly ceased by about 2000 B.P. In similar situations in districts to the south, archeological sites are often associated with natural levees that rise several feet above local floodbasins (Hajic, 1981b; 1981c; 1983b).

Unit 7 is correlated with the Hartwell member which is a major Holocene valley-filling unit in districts to the south (Hajic, 1983b). The Hartwell was deposited under lacustrine conditions or in a very

slowly moving fluvial regime. There is little to no potential of buried cultural deposits in the Hartwell member. There is, however, the possibility of burial of encampments along the lower Bath Terrace scarp as a result of progressively higher river stages (lake levels?) and Hartwell member aggradation.

Unit 8 was deposited primarily in swamp and shallow lacustrine environments occupying depressions in the Bug Island Paleochannel. Accumulation was probably very slow. In districts to the south, the equivalent of this unit, the Buck Lake member, was deposited in the last 3000 years. This may be the case in the Meredosia districts, but the possibility of earlier accumulation exists since the Bug Island channel was abandoned by about 9800 B.P. Floodbasins and depressional areas, while seemingly unlikely for habitation, cannot be excluded from burial or surface site consideration. While perhaps not large in numbers, or size, specialized camps for activities related to aquatic food procurement are a possibility. Equally possible is the lacustrine burial and preservation of such sites as well as their erosion and destruction by an actively meandering tributary creek.

CONCLUSIONS

For any given study area, the needs for settlement patterning and predictive modeling of buried and surface site location potentials in archeological research and cultural resource management are most efficiently and economically served by first modeling the evolutionary history of the landscape. Such an analysis includes not only identification of surficial features and their ages. The location and morphology of previous landscape features may be deeply buried and have no readily apparent relationship to the present landscape. The vertical dimension requires equal emphasis to temporally and spatially define terminal Wisconsinan and Holocene depositional units and environments, erosional hiatuses, and paleo-landscapes. In alluvial environments, such a reconstruction is paramount to establishing the framework which provides the basis for making sound archeological interpretations.

In the Meredosia Districts, several lithostratigraphic units, which

comprise large volumes of valley fill, can categorically be excluded from consideration of buried site potential based upon either their age and/or environment of deposition. The location and vertical and horizontal limits of other units that have a high potential for including buried archeological deposits, such as alluvial fans, have been clearly defined by subsurface investigation.

Buried and surface site potentials can be evaluated for any potential borrow areas by using Figure 18 in conjunction with the geomorphic maps (Figures 4 and 5) and stratigraphic cross-sections (Figures 8-15) of the Meredosia Districts. A generalized summary for buried site potential is presented in Figures 19 and 20. Prior to any borrow activities, a systematic site specific surface survey must still be conducted.

This investigation is considered a component of the archeological survey. During subsequent archeological testing and mitigation phases, specific environments and deposits can, and should, be investigated in more detail.

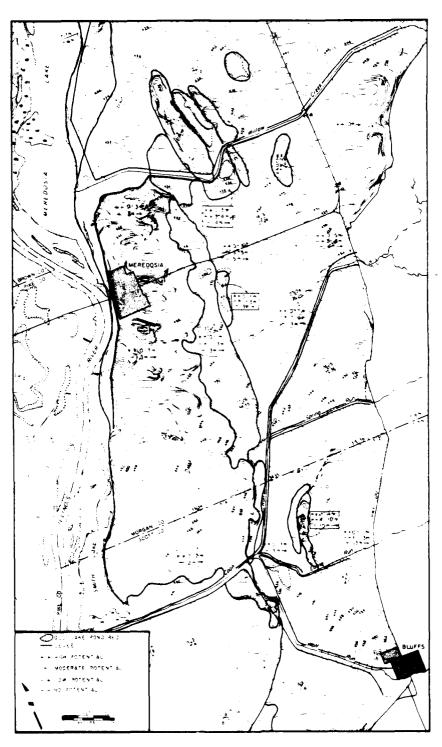


Figure 19. Estimated buried site potentials in the Meredosia Village District.



Figure 20. Estimated buried site potentials in the Meredosia Lake District.

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APPENDIX A

Core Descriptions

Note: Weathering zone terminology is after Hallberg, Fenton, and Miller (1979). The terms "oxidized" (0), "deoxidized" (D), and "unoxidized" (U) are stardard terminology based upon certain moist Munsell colors and iron segregations. The weathering zones are also related to hydrologic conditions such as the length of saturated conditions. The second letter refers to unleached (U) and leached (L) condition of the sediments in relation to carbonate minerals. Mottling of the sediment is signified by (M).

Haster core number: 473 Location: 5E.5E.5W.5ec.26.Ti6N.R. w. (* the base of the Coon Run Landscape Position: distribulity surface archeology: none %CS marred soil: Europsilt loan Elevation: 134.1m. (440pt.) Cored by: David S. Leish, 9-7-83 Described by: Edwin R. Haulo, 8-7	Master core number: 473 Location: SE.SE.SE.SW.Sec.Ze.Ti6N.R13W. Morean Co., on H. Yeck's field rd. 20ft. w.(f the base of the Coon Run levee w.(f the base of the Coon Run levee Landscape cosition: distal alluvial fan Surface archeolog: none SCS manred soil: Dupo silt loam Elevation: 134.im. (440)rt.) Gored bi: David S. Leiph: 9-7-83 Described by: Edwin R. Haulo: 8-1-84	. 20ft.	Master core Location: 9 West of C Lancet of C Core are Cored by: E Lescribed by: E
Deeth om Soal Horazon (1fr.) or Zone	Description	Unified Soil	Depth on So
0- 32 C1 1-0- 13)	dark brown (109R3/3) silt loam, massive, friable, slishtly to noneffervescent at base, abrupt boundary.	로	0- 40 C (0- 16)
32- 64 C2 (13-33)	dark brown (10VR3/3) silt loam, and very dark brown (10VR2/2) heav: silt loam, stratified with strongl, laminated zones and zones with weak subangular blocky structure friable, slightly to noneffervescent, abruet boundary.	륃	40- 60 A) (16- 24) 60- 82 Bt
84-150 Att	vers dark brown (109R2/2) peaty silty clay loam to loam, weak fine subangular blocky to massive. Firm, strongly to slightly effervescent, clear boundars.	로	(24 - 32) 82 - 112 Ct (32 - 44)
150- 209 B2b (59- 82)	very dark erayish brown (2.5V3/2) to dark erayish brown (2.5V4/2) clay loam, with common medium dark vellowish brown (10VR4/6) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, clear boundary.	ರ	112- 150 BC (44- 59)
209- 325 Cb (82-128)	olive brown (2.574/4), light olive brown (2.575/2) and gravish brown (2.575/2) very fine and fine sandy loam, loam, silt, very fine and fine sand, and coarse silt, moderately to strongly laminated, with common fine dark vellouish brown (10784/6) Fe mottles, noneffervescent to slightly effervescent, abrupt brounders.	로	150- 166 BC (59- 73)
325-336 UU (128-132)	dark gra. (5V4/1) silty clay, very weakly laminated, violently effervescent, abrupt boundars.	ช	186- 201 Cl (73- 70)
336- 400+DU (132-157)	dark bravish brown (2.5Y4/2) silt and and very fine sandr silt and moderate to strong medium laminae, strongly effervescent, refusal.	뒫	201- 340 D (79-134)
			340- 400+00 (134-157)

. 473 Sec.26.Ti6N.Ri3W. Morean Co., on H. Yeck s field rd. the Coon Run levee the Coon Run levee in the Coon Run levee noise to an order leve silt loam (440)rt.) Leish, 9-7-83	s field rd. 20ft.	Master core number: 474 Location: SW.SE.SW.Gec.26.T17N.K13W. west of Coon Run levee Landscape resition: Bus Island chann Surface archeology: none SCS marea soil: Ambraw clai loam Elevation: 133.8m. (439ft.) Cored by: David S. Leigh, 9-7-63 Described by: Edwin R. Hault. 8-1-84	Master core number: 474 Location: SW-SE-SW-Sec.26.T17N.K13W. Morean Co., on field rd. about 18 mi. west of Coon Run levee Landscape position: Bus Island channel Surface archeology: none SC-Surface	
Description	Unified Soil Classification	Depth cm Soil Horizon	on Description Classification	5011
dark brown (10VR3/3) silt loam, massive, friable, slightly to noneffervescent at base, abrupt boundary.	lable.	0- 40 C (0- 16)	very dark statish brown (10YR3/2) heavy silt loam. ML massive, firm, noneffervescent, very abrupt boundary.	
dark brown (10VR3/3) silt loam, and very dark brown (10VR2/2) heavy silt loam, stratified with strongl, laminated zones and zones with weak subangular blocky structure friable, slightly to noneffervescent, abrupt boundary.	dark ML weak whily to	40- 60 Alb (16-24) 60- 82 Bb	very dark brown (109KE/2) silty clay loam, CL moderate fine subangular blocky, firm, noneffervescent, clear boundary, very dark brown (109KE/2) silty clay loam, CL	<u></u>
ver dark brown (10VR2/2) peaty silty clay loam	1v loam ML	(24- 32)	· ·	
to together where time substitute blocky to massive, firm, strongly to slightly effervescent, clear boundars, or to slightly effervescent, clear boundars, and the statish brown (2.573/2) to dark prayish	clear clear : srevish CL	62- 112 Cb (32- 44)	very dark gravish brown (10YR3/2) and very dark brown (10YR2/2) and black (10YR2/1) silt loam and silty clay loam, stratified, noneffervescent, fine sandy loam unit at tee, abruet boundary.	=
crown 17*2/2/ clar 10am. with common medium course blowish brown (1044/6) fe mottles, weak coarse subangular blocky, firm, noneffervescent clear boundary.	rolls F. Beak /escent.	112- 150 B2b2 (44- 59)	finely mottled dark granish brown and olive brown (2.5y4/2) and (2.5y4/4) loam and clai loam, with many fine dark vellouish brown (10Y64/6) Fe mottles; weak medium subangular brocky, firm,	
(2.5Y5/4) and gravish brown (2.5Y5/2) very fine and fine sandy loam, loam, silt, very fine and fine sandy and coarse silt, moderated to strongly laminated, mith common fine dark vellowish brown (10YR4/6) Fe mottles, none		150- 166 B3t2 (59- 73)	dark prayish brown (2.574/2) fine sandy loam, spainth many fine dark yellowish brown (10764/4) and dark yellowish brown (10764/4) and dark yellowish brown (10764/6) mottles, weak medium subangular block, yethable, noneffervescent, abrupt boundary.	ą.
coundair. dark grac (574/1) silty clay, very weakly laminated, violently effervescent, abrupt boundary.	ថ	186- 201 Cb2(UU) (73-70)	olive grav (SVS/2) sandr silts clavs with common CL fine light olive brown (2.5YS/4) mottles, slightly effervescent, sand % increases rapidly toward base, abrupt boundary.	ب
dark statish brown (2,574/2) silt and and very fine sandr silt and moderate to strons medium: laminae: stronsly effervescent, refusal.	dium.	201-340 D/UU (79-134)	light olive brown (2.5%5/6) fine and medium sand—SP with common dark gray (5%4/1) thick silt laminae, especially at top of unit, stratified, slightly to strongly effervescent, abrupt boundary.	σ
		340- 400+0U (134-157)	darf statish brown (10VR4/2) and brown to dark brown (10VR4/3) silt and coarse silt, stratified and zones with moderate laminae, strongly effervescent, few krotovina and sand, fills, fine sand laminae begin at 365cm, and increase in frequency with depth, strongl, laminated at base, refusal.	귀

Master core number: 475 Location: SE.SM.SM.Sec.26.716N.Kl and about 110ft. east of terrac Landscare rosition: Bus Island ch Surface archeology: none SCS mareed soil: Amtraw clay loam Elevation: 134.1m. (440ft.) Cored bi: David S. Leien: 9-6-63 Described bi: Edwin R. Hailo: 8-1	Master core number: 475 Location: SE.SH.SW.Sec.Ze.TicN.K13W. Morean Co 15ft, north of field and about 110ft, east of terrace scare Landscare rosition: Bug Island channel SC mare archeologi; none SCS mare d soil: Ambraw clas loam Elecation: 134.1m. (440ft.) Cored bit David S. Leien: 9-6-83 Described bit Edwin R. Hallo. 8-1-84	lard.	Master core number: 476 Location: NE.NE.NE.Sec.34.716N.K MLC-3 on south side of field r Landscape position: Bluffs Terra Suffice archeology, none SCS mapped soil: Hoopeston sandy Elevation: 134.7m. (442ft.) Cored by: David S. Leigh, 9-E-83 Described by: Edwin R. Haule, 8-	16N.513M. eld rd. Terrace sandy loam. -E-83	Morean Co., emerco. 14 ml. west		
Deeth on Soil Horizon (16.) or Zone	Description	Unified Soil Classification	flepth on Soil Horizon (in.) or Zone	f 120n	cription	Unified Soil Classification	
0· 26 A1 (0- 10)	black (10YR2/1) silts clay loams moderate fine subanbular blocks: firm, noneffervescent; clear boundars.	ರ	0- 32 A1 (0- 13)	very dank snay (1096 fine stanular, friab boundary,	very dark grav (10YR3/1) fine sandv loam, weak fine granular, friable, noneffervescent, clear boundary.	SP T	
26- 85 B1 (10- 33)	black (10YRZ/1) silts clas loams (with hish sand content), moderate medium subansular blocky to columnar, firm, noneffervescent, clear boundary.		32- 66 B1 (13- 26)	very dark prayish brown (10YR3/2 with common fine dark vellouish mottles, weak medium subangular noneffervescent, clear boundary.	very dark gravish brown (10VR3/2) fine sandy loam, with common fine dark vellouish brown (10VR3/4) mottles, weak medium subangular blocky, friable, noneffervescent, clear boundary.	loam, SP (4)	
93-46)	Flack (10YKZ/1) clay loam, moderate coarse subansular blocky tendina to columnar, firm, noneffervescent, continuous thin black (10YRZ/1) cla, coats on med faces, clear boundary.	ಕ	66-100 B2 (26-39)	dark brown (109KS/S) fine sand: fine dark vellowish brown (109KS) moderate medium subansular block noneferovenent, clear boundser	dark brown (10VRS/S) fine sand/ loam, with many fine dark vellowish brown (10VR3/4) mottles, noderate medium subangular blocky, friable, nonefferoeffect, close boundary.	Pny SP	
116- 195 B3t (46- 77)	dark stavish brown (2.5y4/2) clay loam, with many fine dark vellowish brown (10YR4/6) Fe mottles and dark vellowish brown (10YR4/4) mottles, weak coarse subanular blocky, firm, noneffervescent, common thin black (10YR2) and very dark stavish brown (2.5y5/2) clay coats on ped faces, clear boundary.	r c∟ rse '×	100- 143 B3 (39- 56)	brown to dark brown (7.5VK4/4) I with many fine dark Yellowish br mottles, weak coarse subangular noneffervescent, clear boundary.	brown to dark brown (7.5YR4/4) loamy fine sand, with many fine dark yellowish brown (10YR3/4) mottles, weak coarse subangular blocky, friable, noneffervescent, clear boundary.	id. SF	
195- 211 C(DL) (77-83)	ver/ dark gravish brown (2,5Y3/2) loamy sand, roofly sorted, weak coarse subangular blocky, friable, noneffervescent, abruet boundary.	3	143- 159 11C1 (56- 63)	dark vellowish brown (10YR4/4) fine and sand, with man, fine dark vellowish brow (10YR3/4) mottles, sinsle smain, losse, noneffervescent, very abrupt boundary.	dark vellowish brown (109K4/4) fine and medium sand, with many fine dark vellowish brown (109K8/4) mottles, single grain, loose, noneffervescent, very abrupt boundary.	e.	
211- 250+DU (-83- 98)	olive brown (2.574/3) poorly sorted medium and coarse sand, common very fine to medium pebbles, stratified, plantly effervescent, few dark brawn (2.574/2) clay lamina, pebbly	ats.	159- 180 OL (63- 71)	dark vellowish brown weak coarse subangul clear boundary.	dark vellowish brown (10YR3/4) loam: fine sand, weak coarse subangular blocks, noneffervescent, clear boundars.	id, SF it,	
	laver at 225cm., refusal.		180- 423+0L (71-167)	dark vellowish brown (109K3/4) and da brown (109K4/4) fine and medium sand, noneffervescent, refusal,	dark vellowish brown (10YK3/4) and dark vellowish brown (10YK4/4) fine and medium sand, noneffervescent, refusal,	owish SF	

MLC-4

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#LC-5		MLC &	
Master Core number: 477 Location: NWINE:NE:Sec.27.T Beauchame Rd. directly ac- Landscare position: Bluers Surface archeologs: none SCS mapped soil: Hoopeston: Elevation: 134.4m. (441ft.) Cored by: David S. Leish: 9 Described by: Edwin R. Halls	Master core funders: 477 Locations NWINE, NE, Sec. 27, Tion, R13W, Morean Co., on the south side of Seauchame Rd. directly across from Virosi Beauchame's corn crib Landscare positions Bluers Terrace Surface archeologis none Surface archeologis n	Master core number: 478 Location SWISWISWISWISWISWISWIED For 20ft, north of Beauchamp Rd. Location SWISWISWISWISWISWISWIED IN distribution Virgil Beauchamp Property. Landscape position: Buy Island Channel Surface archeology: none SCS mapped soil: Decum silt, clay Elevation: 134.1m. (440rt.) Cored by: David S. Leigh, 9-8-83 Described by: Edwin R. Habito, 8-5-64	hann Rd.
Deeth on Sout Horizon (15.) or Zone	Unified Soil Gescription Classification	Depth can Soil Horizon (in.) or Zone Description Class	Unified Soi'
0 130 0L (0- 51)		0- 32 Cl very dark brown (10YR2/2) heavy silt loam, (0- 13) moderate medium to fine subangular blocky, firm, violently effervescent, abrupt boundary.	륃
150- 180 C (51- 71)	dark vellowish brown (10VK4/4) coarse and medium SP sand, recolly sorted. Common very fine and fine rebbles, stratified, noneffervescent, gradual boundary.	32- 89 Alb black (10VK2/1) reaty sulty clan loam, moderate (13- 35) fine granular, firm, violently effervescent, many wastrorods, whole and fragmented, abrunt boundary.	ಕ .
180- 312 OL (71-123)	dark rellowish brown (109K4/4) medium and coarse SF sand, moderately well sorted, stratified, noneffervescent, few Zones with small amount of silt, abrust boundary.	89 120 A3b ver, dark grav (10983/1) heavy silt loam, weak (35- 47) medium subangular blocky, firm, violently to slightly effervescent, clear boundary.	룯
312- 360+0L (123-142)	dark vellowish brown (10VKS/4) claves coarse sand SW and coarse sand, soorly sorted, many very fine and fine sebbles, stratified, noneffervescent.	120167 B22bt darl bran (109R4/1) silty clark strong coarse (-4766) prismatic, very firm, noneffervescent, continuous thin very dark bran (109R3/1) clar coats on med faces, clear boundary.	ಕ
		167- 204 B23bt stailsh brown (2.5Y5/2) silts clas loam, with (66- 80) many medium dark vellowish brown (10YR4/4) and dark rellowish brown (10YR4/6) Fe mottles, moderate coarse subangular blocks, noneffectivescent, mans thin versidark star (10YR3/1) clas coats on sed faces and in pores, stadual boundars.	ರ
		204-240+BSbt dari granish brown (2.574/2) and granish brown (2.575/2) sand, loan, with few medium dark vellowish brown (10764/2) Fe mottles, weak coarse subangular block,, firm, noneffervescent, common thin very dark gran clar coats on ped faces and in Pores, refusal.	લે. તેક

	D c d	Unified Soil	로	ਵੱ	뒫	¥	Ĕ	£	ಕ	重
	ister core number: 480 cations NUMBERS and Co.,50ft, south of Beauchame and 12ft, east of the edge of a north-south field road fload distallations distal alloval fan frace archeologistons distal alloval fan frace archeologistons distal alloval fan frace archeologistons (446ft.) fan evettons 135,9m, (446ft.) frace britist 135,9m, (446ft.) frace britist 135,9m, (446ft.) frace britist 135,9m, (446ft.)	Unified Soil Description Classification	very dark brown (10VR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	dark brown (10VRS/S) silt loam, with many fine dark vallouish brown (10VRS/4) mottles, weak medium subangular blocky, firm, noneffervescent, gradoal boundary.	light olive brown (2.595/4) to light vellowish brown (2.596/4) at base silt loam to silt, with many fine light olive brown (2.595/4) and olive brown (2.594/4) mottles, weak coarse subangular blocky, tirm, slightly effervescent, abrupt boundar	hight vellowesh brown (2.5%6/4) and lesht clave brown (2.5%5/6), and gravish brown (2.5%5/2) and dark graitsh brown (2.5%4/2) self and dark vellowesh brown (10%64/6) to (10%65/6) very fine and fine and stratified with some self zones, modrately to stratified with some self zones, modrately to strongly laminated and with sand laminae, slephtly to strongly effervescent, variable, very abrupt boundary.	light brownish gray (2.5%6/2) and light yellowish brown (2.5%6/4), and light gray (2.5%7/2) and light olive brown (2.5%5/3) silt, strongly laminated, strongly effervescent, very abrumt boundary.	gravish brown (2.5%5/2) coarse silt and silt, strongly effervescent, clear boundary.	olive grav (575/2) and olive (575/3) silty clay to clay, strongly laminated, strongly to violently effervescent, upper half has a 5cm. zone of marl laminae, top of unit has whole gastropods, ver, abrupt boundary.	stronely laminated gravish brown (2.595/2) and brown (7.5965/2) silt and light olive brown (2.595/4) fine sand, silt is strongly efferwacent and sand is slightly efferwacent, refusal.
PLC-8	Master core numbers 480 Locations NAINANN-Sec. 26.716N-R134, Mc 12rt. east of the edge of a north-soul Landscape positions distal alluvial fan Surface archeologis nore SCS mapped soils Littleton silt loam Elevations 135,9%, (44cft.) Cored byz David S. Leigh, 9-13-63 Described by: Edwin R. Haule, 8-5-84	Gepth cm Soil Horizon (in.) or Zone	0- 65 A1 ver (0- 26) sul	65-97 B day (26-38) day entre	97- 179 C(MDU) 11- (38- 70) ma ma br	179- 257 D/OU 11. (70-101) da	257- 530 DU 11 (101-130) br 11 14	330- 353 DU 91 (130-139) st	353- 399 MUU ol (139-157) to vi	399- 425+MJU st (157-167) (2
	F. Kd.	Unified Soil Classification	g.	ā.						
	the of Beauchine	Units Classif	y Jep.	vellowish moderately 0-370cm.						
	479 rc.23.Ti6N.Ki3W. Morean Co45ft. north of Beauchame Rd. it of terrace edge east of Bluffs Terrace sous sandy loam 442ft.) rish, 9-13-83	Describuson	solum of LaMosus sandr loam, clear boundar	dark vellowish brown (10VK3/4) and dark vellowish brown (10VR4/4) fine and sedium sand, soderately to well sorted, few fine sebbles at 350-370cm, and 430-450cm, noneffervescent, refusal,						
MLC-7	Master core number: 479 Location: SE.SM.SW.Sec.23,TidN.Ri3M. More and about 85rt. west of terrace edge Landscree position: east of Bluffs Terrace Surface archeology: nest of Bluffs Terrace Surface archeology: Advant Jan. Edwartion: 134.7m. (442ft.) Cored by: David S. Leish, 9-13-83 Described by: Edwin R. Haile: 8-5-84	Depth on Soal Horazon		153- 460-C(OL) d. (60-189) t.						

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The control of the co	black (10VK2/1) and very dark bray (10VK3/1) coarse salt, than massive bed with many strong laminae especially at top, slightly to strongly effervescent, variable, many mastroped and brailve shells whole and figure control for 15cm.	Softles, tag time places of dicalocalized of selling satter, very ablicat boundary.	very dark era: (5Y3/1) and dark olive era: (5Y3/2) coafe silt and eraxsh brown (2Y3/2) (11 to this trions)	party training the process of the pr								
Bescription Description Description Description Description Description Description Description Description Down (109K8/E) mottles; weak nary blocky, friable, very slist Clear boundary. 2.574/4) silt loam, with man, friends brown (109K8/E) silt loam, x vellowish brown (109K8/E) silt loam, x vellowish brown (109K8/E) mottles; weak nt, brown (109K8/E) silt loam, with many in to very slishly effervescent town (2.574/A) silt loam, with many in to very slishly refervescent brown (109K8/E) and olive brown coam, with common fine lish to lish ary. 2.573/A) silt loam, with many in tower slish to lish coan, with common fine lish to lish ary. 2.573/A) silt loam, with countered at brown (109K8/E) mottles; base, monerfervescent to slish clive brown (2.574/3) mottles ine dark vellowish brown (109K8/E) ine dark vellowish brown (109K8/E) (2.575/2) and lisht vellowish lisht clive brown (2.574/3) mottles ine dark vellowish brown (109K8/E) and dark vellowish brown (109K8/E) (2.575/2) and dark bravish brown (109K8/E) (2.575/2) and dark brown (109K8/E)	664- 702 OU (269-27c)		702- 816+U/DU (276-321)									
Bescription Description Description Description Description Description Description Description Description Down (109K8/E) mottles; weak nary blocky, friable, very slist Clear boundary. 2.574/4) silt loam, with man, friends brown (109K8/E) silt loam, x vellowish brown (109K8/E) silt loam, x vellowish brown (109K8/E) mottles; weak nt, brown (109K8/E) silt loam, with many in to very slishly effervescent town (2.574/A) silt loam, with many in to very slishly refervescent brown (109K8/E) and olive brown coam, with common fine lish to lish ary. 2.573/A) silt loam, with many in tower slish to lish coan, with common fine lish to lish ary. 2.573/A) silt loam, with countered at brown (109K8/E) mottles; base, monerfervescent to slish clive brown (2.574/3) mottles ine dark vellowish brown (109K8/E) ine dark vellowish brown (109K8/E) (2.575/2) and lisht vellowish lisht clive brown (2.574/3) mottles ine dark vellowish brown (109K8/E) and dark vellowish brown (109K8/E) (2.575/2) and dark bravish brown (109K8/E) (2.575/2) and dark brown (109K8/E)	***			red Soil fication	뒫	뒫	로	분	륃	<u>></u>		분
con.Ri3W, Morman Co., 30ft, wes me Rd. Jluvial fan. 14-83 14-83 a Dueo milt loam, wradual bou cun (2.574/4) milt loam, with lower lovertess weak to mottles subaneular block: friable, vercent clear boundar. I mraish brown (109R3/2) milt loam, with lowish brown (109R3/2) milt loam, with lowish brown (109R3/2) mottles weak to moder to vescent to very milt loam, with common fan limble brown (109R3/2) clav common fant brown (109R3/2) clav common fant loam, with common fan limble brown (2.595/4) and clive filt base, mottless weak to moder to cent at base, abrunt boundary. Inve brown (2.595/4) and limble effection (2.595/6) mottless weak to moder to cent at base, abrunt boundary. brown (2.595/2) and limble brown (2.594/3) and limble olive brown (2.594/3) and limble brown (2.594/4) milt and coarse silt, mith olive brown (2.594/4) mottless brown (2.595/2) and dark grown brown (2.594/4) mottless brown (2.595/2) and limble brown (2.594/6) mottless brown (2.594/6) mottless brown (109R4/6) mottless brown fan massive cent simble brown (2.594/6) mottless brown (2.594/6) mottless brown (2.594/6) mottless brown, few massive brown (2.594/6) mottless brown (2.594/6) mottless brown (2.594/6) mottless brown, few massive brown (2.594/6) mottless brown (2.594/6) mottless brown, few massive brown (2.594/6) mottless brown few massive brown few mottless brown few massive brown few mottless brown few mottless brown few mottless b				Unif Classi	ndary	man, fine , weak Y slimhtly	loam. 4) mott	4 4 4 A	brown (2 tht olive ately slightly	Estingany gottles and sottles; meak fervescent,	lowish brown 5/4) silt, (10YR4/6) Hffervescent,	ish brown common fine s, lently
	ich.Ri3W, Morean Co., 30ft. wes amp Rd. alluvial fan	2 d d d d d d d d d d d d d d d d d d d	8-4-84	Descrietion	f a Duro silt loam, wradual bou	olive brown (2.58444) silt loam, with dark vellowish brown (109846) mottles coarse subangular blocky, friable, ver effervescent, clear boundary.	ver, dark bravish brown (109KS/2) silt man: fine dark vellowish brown (109KS/ weak fine subaneular block:, friable, noneffervescent: bradual boundary.	olive brown (2.599/4) silt loam, with dark rellowish brown (109K3/6) mottless coarse subansular blocks, friable, noneffervescent to very slishlir effer few thin dark brown (109K3/3) clay coaradual boundary.	light olive brown (2.595/4) and olive 594/4) silt loam, with common fine lightcom, (2.595/6) mottles, weak to moder laminated at base, noneffervescent to effervescent at base, abrunt boundary.	olive brown (2.583/4) silty clay loam, fine dark vellowish brown (10983/6) Fe with many fine olive brown (2.584/3) m laminated to massive very slightly eff clear boundary.	eralish brown (2.5V5/2) and light vell (2.5V6/4) and light clive brown (2.5V5 with common fine dark vellowish brown mottles, strongly laminated strongly e rare fine sand laminae near base, grac brondary.	eralish brown (2.5%5/2) and dark gravi (2.5%4/2) silt and coarse silt, with o dark vellowish brown (10%64/6) mottles moderately laminated, strongly to vio toxidary.
	MLC-9 Master Core number: 401 Location: SE.SE.SW.Sec.Z4.IlteN.Ri34. Mo and 60***, north of Beauchamp Rd. Landscape posstion: medial alluvial fan Surface archeologi: none	GCS marred soils four silt loam Elecations 130.0m. (456-ft.)	Described by: Edwin R. Hause, 8-4-84	Deeth on Soal Horazon	0- 112 OL (0- 44)	112- 135 C (44- 53)	135- 210 Ab (53- 83)	210-330 Bb (33-130)	330- 445 C (MDD) (130-175)	445- 491 MIN (175-193)	491- 620 MM	620- 684 MDI) (244-269)

trounder v.

Master core number: 462 Location: NW.NW.NW.Sec.Zo.Tibn.KijW. Morean Co., 40ft. south of Beauchamp Kd.

and 400ft, east of fenceline Landscare resitions medial allovial fan Surfact ancheologyt none SCS marred soilt Duro silt loam

Elevation: 138.1m. (453ft.) Cored bil David S. 1mh: 9-14-63

Described bit Edwin R. Hause, 8-4-84

Unified Soil Classification Description Death in Soil Horizon (10.) or Zone Ę brown to dark brown (10YR4/3) silt loam, massive, 0- 38 C1(SPOIL) (0- 15)

Į very dark grayish brown (10983/2) silt loam, weak friable, noneffervescent, clear boundary. 38- 38 C2 (15-34)

fine granular, friable, noneffervescent, abrupt

teaundar ..

턴 black (IOVR2/1) silt loam, moderate fine eranular, ver, "Friable, noneffervescent, few fine charcoal 98-108 A1b (39-54)

Pieces, abrupt boundary.

턴 Ħ burned solum, silt, A hornzon, heavy silt loam harizens, gradual boundars. 138- 326 OL (54-128)

턴 light olive brown (2.895/4) silt loam, with many fine light olive brown (2.595/6) mottles, weak coarse subangular blocky, friable, noneffervescent, gradual boundery. 326- 365 MDL (128-144)

grainsh brown (2,5Y5/2) and light olive brown

된 (0.09%), and clive brown (2.094/4) silt, noderate), to strongly laminated at base, with common fine dark vellowish brown (10984/6) and light clive brown (2.595/6) mottles, slightly effervescent, very abrupt boundary. 365- 424 MDU (144-167)

로 eralish brown (2.5%5/2) and dark gravish brown (2.5%4/2) silt and coarse silt, strongly laminated, with common fine and medium dark vellowish brown (10%K4/6) Fe mottles, slightly effervescent, very abrupt boundary. 424 - 492 MEU (167-194)

턴 light brownish grav (2.5%6/2) and gravish brown (2.5%5/2) silt, weak thinly laminated to massive, few brown to dark brown (7.5%R4/2) to (7.5%R4/4) silt; clay laminae, especially at base, nonefferveucent, very abrupt boundar 492- 511 DL (194-201)

턴 (2.5Y5/2), and light brownish gray (2.5Y6/2) silt and coarse silt, strongly lamimated and thin massive beds, strongly to violently effervescent, few fine uncarbonized Pieces of organinic matter, dark gravish brown (2.574/2), gravish brown very abrumt boundary.

511-590 PU (201-232)

590- 600+DU (232-236)

gravish brown (2.5Y5/2) fine and very fine sand. few laminae from the above unit, violentli-effervescent, refusal,

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light olive brown (2.575/4) fine and medium sand, few ver; dark gravish brown (109R3/2) sand; silt laminae which are strongly effervescent, refusal.

lisht vellowish brown (2.5%6/4) fine sand, violently effervescent, few dark stayish brown (2.5%4/2) and organic laminae which are strongly effervescent, indeterminant boundary.

Master Core numbers 493 Locations SW-SE-SE-Sec-2 directly across the ro- front vard.	Master core numbers 483 Location: SW-SE-SE-SE-SE-Z3-T16N-K13M- Morean Co., 45ft. north of Beauchame Kd discrib across the road from the nouse with a white tractor tire in the from vard.	chame Kd. in the	415- 600 DU (163-236)
Laidscape Positioni media) alluvii Surface archeolomi none SCS marred soil: Durc silt loam Elevationi 136.9m (449ft.) Cored by: David S. Leish, 9-14-63 Described by: Edwin R. Hauld, 6-5-6-	Landscape position; media) alluvial fan Surface archeolosy; noné SCS mapped soil: Dupo silt loam SCS mapped soil: Dupo silt loam SCS mapped soil: Dupo silt loam Cored by: David S. Leish, 9-14-63 Described by: Edwin R. Hauic, 6-5-84		600- 720+BU (236-283)
Derth on Soal Horazon (an.) or Zone	Description	Unified Soil	
(very dark gravish brown (10VR3/2) sand: loam: massive: firm: noneffervescent: clear boundary.	로	
30- 72 AI (12- 28)	very dark graylah brown (10yR3/2) silt loam. moderate fine granular, friable, noneffervescent gradual boundary.	<u>.</u>	
72- 102 B (28- 40)	dark brown (109K3/3) silt loam, moderate medium subansular blocks, friable, noneffervescent, gradual boundary.	췯	
102- 229 C(MDU) (-40- 90)	light olive brown (2.575/4) to light vellowish brown (2.576/4) at base silt, with man fine light vellowish brown (2.576/4) and light olive brown (2.575/mh(tles, weak subgravial at block to slightly to strongly efferivescent at base, last 20cm. have few thin dark gravish brown (2.574/2) silt coats on red faces and few thin Fecoats on red faces, very abrupt boundary.	로	
229- 269 1186 (90-114)	brown to dark brown (10VR4/3) silty clay loam, with many fine dark yellowish brown (10VR3/6) Fe mottles, weak fine subangular blocky breaking to weak fine subangular blocky firm, very slightly effervescent, very abrupt boundar,	분	
239- 340 MBU (114-134)	light clive brown (2.5Y5/3) silt, with many fine dark vellowish brown (10YR4/6) and light clive brown (2.5Y5/4) mottles, weak coarse subangular blocky, firm, slightly effervescent, abrupt boundary.	로	
340- 391 DU (1:4-134)	light vellowish brown (2.5%6/4) and olive vellow (2.5%6/6) fine sand with few gravish brown (2.5%5/2) silt laminae, stratified, slightly effervescent, abrupt boundary.	å.	
391- 415 MBO (154-163)	brown (109RS/S) and light ollive brown (2.5YS/4) silt, with common medium and fine dark yellowish brown (109R4/6) mottles; weakly laminated, slightly effervescent; few very fine sand laminae, abrupt boundary.	로	

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	1954. 464 [ii] light brownish gray (2.576.2) and granish brown (139-18). (2.575/2) with some dark braysh brown (2.5747.2) townwards base silt, moderate to strong laminae at base, few heavier laminae (silt hoan) and tine sand, silt laminae at base, few fine dark vellowish brown (10764/6) Fe mottles, slightly effervescent, ver, abrupt boundary.	466-505 UL claye (5Y5/3) silty clay with common reddish (183-199) brown (5Y85/3) clay reds, reds increase in crease in	reddish brown (BYKA-24/4) salt, Clar, massive weall, laminated at base, noneffervescent, very abrupt boundary.	505- 600 UU state brown (2.5V5/2) and olive stat (5V5/2) (194-236) state and very fine sand, silt, olive yellow (2.5V6/6) and light olive brown (2.5V5/6) very fine and fare sand, top 70m, has brown (2.5V5/4) and each fine sand, top 70m, has brown (2.5V5/4) and each fine sand, top 70m, has brown (2.5V5/4) and	laminae, strongly effervescent, few dark grayish brown (2.5Y4/2) creanic silt laminae, gradual boundary.	600- 800+UJ light vellowish brown (2.596/4) fine sand, with (236-315) few dark vellowish brown (10YR4/4, 3/4) silt laminae, few organic laminae, violently effervescent, refusal.	Comments: Done		
	Pu ●		Unified Soil	로	로		뒾	뒫	뒫
	between MLC-10		Unified Soil Classification	able zones of ne standar , abrust	eravish brown cam and silt: iv laminated baneslar blocky.	ently to many thin clay coats on icturbated om two units	stratified ate fine tures. 5lightly have many very 554 and hin to coats on med	limbt olive silt loam, nd coarse ommon fine tiles, firm to man thick tely thick ew thin to	light v laminated, e brown ervescent, verv
	Master Core number: 484 Location: SE.SE.SE.Sec.23.TIGN.KI3M, Morean Co., midway between MLC-10 and MLC-11. 30 by the north of Beauchame Road Landscare rosition: medial allovial fan Surface archeologis none Sus magred soil: Littleton silt loam Elevation: 137.5m, 481ft.) Cored by: David S. Leigh, 9-21-63	n V. Hause, 8-5-84	Description	dark brown (10VR3/3) silt loam, variable zones moderate fine plater and moderate fine scanular structures, friable, noneffervescent, abrupt boundary.	very dark gray (10VR3/1) to dark grayish brown (10VR4/1) variable colored silt loam and silt, stratified with units of moderately laminated zones, moderate fine to medium subangular block	friable, noneffervescent to very slightly effervescent, some units with common to many thin to moderately thick black (10YR2/1) clay coats on ped faces and in pores, moderately bicturbated with inclusions of very time peds from two units below, clear boundary.	black (10VR2/1) heav, silt loam, and gravish brown (10VR5/2) silt and silt loam, stratified with units of weak laminae and moderate fine granular and subangular blocky structures, friable to firm, noneffervescent to slightly effervescent, heav, silt loam units have many very fine peds of light olive brown (2.5V5/4 and (2.5V5/6) silt loam, few to common thin to moderately thick black(10VR2/1) clay coats on ped faces and in pores, abrupt boundary.	light vellowish brown (2.596/4) and light oliver brown (2.595/4) heavy silt loam and silt loam, weakly stratified with weak medium and coarse subangular blocky structures, with common fine dark vellowish brown (10/64/6) Fe mottles, fine friable, nonefervescent to very slightly effervescent, common thin and moderately thick black (10/82/1) coats in pores and few thin to moderately thick faces, clear boundary.	light rellowish brown (2.5%6/3) and light rellowish brown (2.5%6/4) silt, weally laminated, with many fine and medium light clive brown (2.5%5/4) mottles, very slightly efferwescent, very abrust boundary.
71-17	Master core number: 484 Location: SE.SE.Sec. 23.116N.K13M. MLC-11: 30 ft. north of Beauchame Landscape position: medial allocial Surface archeologi: nore SCS mapped soil: Littleton silt loam Elevation: 137.5m. (451ft.)	Described by: Edwin V. Hallo, 8-5-84	Depth on Soll Horizon (15.) of Zone	0- 124 A1(Cum.) (0- 49)	124- 202 C1 (49- 30)		202- 242 C2 (80- 95)	242- 324 Bbt (95-128)	324-354 Cb (126-139)

At the state of th	150+t. west of Hw., 100-67 Landscape positions medial 505 mapped soils Worther si 505 mapped soils Worther si 506 mapped soils Worther si 506 mapped soils Worther si 506 mapped soils Horizon (1n.) or Zone (1n.) 0- 86 CL solum 1 0- 34) 86- 234 CL solum 2 34- 22) 34- 220 (100 K3) 117-148) finely 92-117) coarse few this 977- 500 DU lisht y 148-197) (100 K3) 148-197) coarse few this 977- 500 DU lisht y 148-197) (100 K3) 148-197) coarse few this 977- 500 DU lisht y 197-210) coarse for mass 100-231) to mass 100-231) to mass 1231-235) to mass 1231-235) madden werr abn ween and oli	ISOFt, west of Men. 100-67 at the edge of a corn field Landscape positions medial alluvial fan Surfece archeology, none sold Surfece archeology, none SCS mapped solls Worthen silt loam. SCS mapped solls Worthen silt loam. Elevation: 135.6m. (445ft.) Cored by: David S. Leigh, 9-4-63 Described by: Edwin R. Hauld	Unified Soil Description Classification	1, silt loam, clear boundary ML	. 2, silt loam, clear boundary ML	finely mottled light clive brown (2.5V5/4) and ML light clive brown (2.5V5/6) light silt loam, weak coarse subangular blocky, friable, noneffervescent, few thin black (10VR2/1) clar coats in Pores, gradual boundary.	medium and finely mottled dark vellowish brown ML (169854) and lisht olive brown (2.595/4) silt, zones of weal fine laminations, massive, noneffervescent, abrupt boundary.	light vellowish brown (2.5Y6/4), light olive brown (2.5Y5/4) and light olive brown (2.5Y5/3) (variesated) silt and very fine sand, moderately to strongly laminated, slightly effervescent, abrupt boundary.	thinly bedded light clive brown (2.595/4), graitsh brown (2.595/2) and light clive brown (2.595/3) (variegated) heavy silt loam and silt, as 377, silt zones are meably laminated, slightly to strongly effervercent, variable, very abrupt boundary.	gravish brown (2.5%5/2) and dark gravish brown (2.5%4/2) clay loam, strongly laminated at top to massive, top has several organic laminae and loam, fine sand laminae, with common medium and coarse dark vellowish brown (10%K4/6) Fe mottles, noneffervescent, very abrunt boundary.	moderately laminated reddish brown (2.5YR4/4)2) CL and olive grav (5Y5/2) sandr clai, with common medium dark vellowish brown (10YR4/6) Fe mottles, very abroupt boundary.	thin), bedded gravish brown (2.575/2) fine sand and ML
		of Hus. 100-67 floor: medial log: morther si log: 445ft.) ide. (445ft.) ide. R. Habit	Horazon Jone	solum 1.	8 o l un		medium (10VR3/ of meal	lisht brown (varie modera efferv	thinly be gravish b (2.58/5/3) as 3/7, s to strone boundary.	eravis (2.5/44 to mas loans Coarse	modera and of medical	thinly

grailsh brown (2.585/2) and light olive brown (2.585/3) silt, stratified some zones with weak to moderate laminae, with few tine and medium dark vellowish brown (109846) Fe mottles, slightly efferescent, thin sand beds or thick laminae at 350cm., 370cm., 392cm., 446cm., and krotovina at 494cm., heavi dari iron staining at base.	stratified and finely laminated gravish brown (2.595/2) and light olive brown (2.595/3) silt and very fine sand, with few medium	dark vellowish brown (10VR4/6) Fe mottles, strongly effervescent, top 5cm, is heavily oxidized, very abrupt boundary.	stronely leminated dark eray (574/1), liett yellomish brown (2,576/4), lieht vellomish brown	(2.5V6/5) and light ollive brown (2.5V5/4) silt and silt loam, strongly effervescent, very abrupt boundary.	very dark snav (SV2/1) silt loam mith sand increasing at base, meally laminated to massive, with few fine very dark snav (7,5VR3/1) mottles	near base, strongly effervescent, one sand, vus. abrupt boundary.	dark gravish brown (10vR4/2) fine and medium sand mith some silt, few laminae of dark gravish brown (2.5y4/2) silt, strongly effervescent, refusal.					
350~ 565 MPU (138~222)	565- 599 DU (222-236)		599- 650 D/UU (236-256)		650- 670 UU (256-264)		670- 770+DU (264-303)					
Morean Co., 40ft, south of Mws. 100 and rn field in	Unified Soil	Description Classification	(10YR2/1) silt loam, moderate fine mranular. Mi e. noneffervescent, mradual boundary.	very dark brown (10VR2/2) salt loam, moderate ML medium subangular blocky, friable, conserversent few Chartcoal framements at 130cm., few this blass (10VR/X) slav coats is sense, few	thin light brownish gray (10YR6/2) silans on med faces, heavily bioturbated, gradual boundary.	derk gravish brown (10VR3/2) silt loam, with ML fine dark vellowish brown (10VR3/4) mottles, medium cubangular blocks, friable,	noneffervescent few thin very dark brown (10YR2/2) clay coats in mores, few thin light browns or a. (10YR2/2) clay coats in mores, few thin light brownsh sra, (10YR6/2) silans on med faces, heavily bioturbated, sradual boundary.	ver, dark brown (10YK2/2) salt loam, wath common ML fine dark, rellowish brown (10YR3/4) mottles, moderate time granular, very friable, noivefervescent, very freable, broundary.	dark brown (109KS/3) silt loam, with common fine ML dark yellowish brown (109KS/4) mottles, weak medium subangular blocky, friable, noneffervescent, few thin very dark brown (109K2/2) clay coats in pores, clear boundary.	light olive brown (2.575/4) silt loam to silt. With common fine dark vellowish brown (107K3/6) mottles, weak coarse subangular blocks, friable, noreffervescent, few thin vers dark brown (107K2/2) clay coats in pores, abrupt boundary.	dark grav (10984/1) silt loam, moderate medium ML subansular blocky, friable, noneffervescent, very hishly variesated, heavily bioturbated and mixed, ver, percus, clear boundary.	thind, stratified light yellowish brown (2.5V6/4) ML solt and light olive brown (2.5V5/4) and dark gravish brown (2.5V4/2) solt loam to solty clay come, solt beds are weak to moderately laminated, with few fine dark yellowish brown (10VK4/6) mottles, slightly effervescent, abrupt boundary.
11 12 4	192		black (10YR2/1) silt loam, friable, noneffervescent,	very dank brown (100% medium subangular b) numeffervescent, few few filos	thin light brownish faces, heavily biotu	Very derk gravisch branch branch derk verlog Barn füre derk verlog Best gedüum subbased)	nonefferescent, few thin very dark broke (10982/2) clay coats in mores, few this brownish shar (10986/2) silans on med heavily bioturbated, sradual boundary.	ver, dark brown (10Y fine dark vellowish moderate tine granul nonefervescent, ver boundary.	dark brown (109KS/3) salt loam, war dark yellowish brown (109KS/4) mot-medium subansular block), friable, neneftervescent, few thin very dark (109K2/2) clay coats in pores, cle	lish to olive brown (2.575/4) silt with common fine dark vellowish mottles, weak coarse subangular noireffervescent, few thin very (10782/2) clay coats in pores,	dark wraw (109K4/1) subangular blocky, f highly variesatedy b very percess Clear b	thin), stratified 11 solt and light olive gravish brown (2.574 loan, slift beds are few fine dark vellow slightly effervacen
Master core number: 436 Location: Nat.SwinE.Sec.24.Tion.Rida. 1/4 mi. west of MC.1s in edge of of Landscape position: medial alluvial f Surface archeologic none SCS mapped soil: Littleton silt loam Elevation: 136.4m. (464-t.) Cored by: David G. Leight, 9-21-83 Occord by: David G. Leight, 9-21-83	Deeth on Soal Horizon	(1n.) of Zone	0- 67 A1 (-0-34)	87157- B 2 (-3462)		157- 208 B3 (-62-82)		205- 229 A16 (82- 90)	229- 250 B2b (-90- 98)	250- 268 B3b (98-10c)	265- 276 A1b2 (106-109)	278- 350 (62(MDU) (104-136)

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Master core number: 488 Location: SW:NN:NE:Sec.13.TI6N:RI3W. Morean Co.: 50ft. north of Hw.: 104 and	Ť	 04 ₽ nd	
45ft, east of count, rd.			
Lendschre rossither: distal allocial far			
Weinfand and here and			
OCO mapped soil: Worther silt loss			
Elevation: 135.0m. (443+t.)			
Cored b.: David S. Leish, 9-22-63			
Described by a Edwin R. Hajic, 7-30-84			

(10.)	or Zone	Description C14	Classification
0- 134 OL (0- 53)	ಕ	solum, silt loam, mradual boundary	토
134- 214 (53- 84)	214 C(DU) 84)	light olive brown (2.5Y5/4) silt loam, few thin beds of very dark gravish brown (10YR3/2) silt loam in lower 25%, weak subangular blocky, slightly effervescent, common thin to moderately thick very dark brown (10YR2/2) clay coats in pores, very abrupt boundary.	로
214- 228 (84- 90)	3 8	finel, mottled dark sravish brown (2.594/5) and olive brown (2.594/4) silt loam, moderate coarse subansular blocks, noneffervescent, common thin very dark brown (10VR2/2) clay coats in pones, many thin very dark sravish brown (2.593/2) clay and silt coats on ped faces, clear boundary.	Fry ML
228- 312 Cb(DU) (-90-123)	Ct (DD)	light clive brown (2.5Y5/4) silt, with many fine and medium and vellowish brown (10YR5/4) Fe mottles, massive, slightly effervescent, clavey silt last locm, very abrupt boundary.	Es,
312- 323 (123-127)	na	brown to dark brown (7.5VR4/2) silty clay loam, with common tine olive stay (5V5/2) and with few fine dark yellowish brown (10VR4/6) Fe mottles, massive, very slightly effervescent, clear boundary.	툿
323- 360 UL (127-142)	٦	olive grav (5V5/2) heavy loam, with few fine dark vellowish brown (10VR4/6) mottles, massive to weakl, laminated at base, noneffervescent, abrupt boundary.	Ę
360- \$80 DU (142-150)	ña	light olive brown (2.595/3) medium sand, massive, slightly effervescent, abrupt boundary.	e E
380- 410+D/U (150-161)	n/9+	olive grar (5V5/2) heavy loam and light clive brown (2.5V5/6) silt, and brown (7.5V85/2) silt, and gravish brown (2.5V5/3) medium sand, stratified, noneffervescent, refusal.	ž Ž

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Master core numbers 400 Locations 6M-NM-NM, Sec. 14.1 75st. east of next fireld Landscape sositions medial Surface arrections; none 500 mapped soils Morther elevations 156.6m. (440st.)	Master core number: 409 Location: SWINNINN, Sec.24.Ti6N.KISW. Morean Co., 45ft, north of Hui. 104 and 75ft, east of next field Zort, east of next field Landscape Position: medial alluvial fan Surface archeologi, none 5CS maeped soil: Worther silt loam 5CS maeped soil: Worther silt loam	pue 40	258- 307 [162162 (102-121)	olive brown (2.574/3) silti clai loam, with teu medium dark rellowish brown (10/R3/6) Fe mottles, west subangular blocks, firm, silasti. effervescent, some secondar, carbonates near top of unit, weak indication of original stratification, thinh, bedded, abrupt boundary.	ರ
Cored by David S. Le Described by Edwin R Casett on Cont. Montes			307- 312 111B22b2 (121-123)	Pale brown (109K6/S) salt loam, with common fane dark selish brown (109K4/6) Fe mottles, weak subangular blocks, friable, slightly effervescent, very abrupt boundar	Ę
(1n,) or 2one 0- 33 Ap	Description CI	Unified Soil assification	312- 331 IVB23b2 (123-130)	troun (10VK5/3) heav, silt loam, with common fine dark vellowish brown (10VR4/6) Fe mottles, moderate coarse subansular blockii, firm, ver, slightly effervescent, few thin brown (10VR5/5) clar coats	۳. <u>ج</u>
53- 62 At (-1324)	abrust boundary. abrust boundary. very dark brown (IOVK2/2) silt loam, moderate fine granulary friable, noneffervescent, heavily bioturbated, clear boundary.	£	331- 370 VB2462 (130-146)	in rotes and on red faces, ver, abrupt boundary, dark praish brown (10YR4/2) silts clas loam, with man, fine dark vellowish brown (10YR4/6) Fe mottles, weak subangular block,, firm, coneffervescent, few thin dark prayish brown	로
6.24 (35)	dark vellowish brown (10VR4/4) silt loam, moderate medium subansular blocks, friable, noneffervescent, man, thin to moderately thick ver, dark brown (10VK2/2) silt and clay coats in pores and on ped faces, clear boundary.	뒫	370- 426 VB2562 (146-168)	(10YK4/2) cla, coats in pores, pradual boundary, 9. a.ish brown (2.5Y5/2) silts clay loam, with many fine dark sellowish brown (10YK4/6) Fe mottles, weak subangular blocks, firm, noneffervescent, few thin dark graish brown (10YK4/2) clas coats	ت ع
89-141 Pst (35-86)	dark relioussh brown (10YR4/4) silt foam, with man, fine, ellowish brown (10YR5/4) mottles, moderate coarse subargular blocks, friable, confervescent, few thin very dark brown (10YR2/2) silt and class coats in pores and on ped faces, clear boundars.	Ĭ.	426- 503 VICI62 (168-198)	snavish brown (2.595/2) and light brownish snav (2.596/2) clave, silt and silt, stratified and moderately laminated, with few time vellowish brown (10985/6) Fe mottles, slightly effervescent, one zone of slightly heavier brown (7.5985/2) claves silt, very abrupt bounders.	Ē
141 157 ((-56 62)	vellowish brown (10VK5/4) silt loam, with many fine dark vellowish brown (10VK4/4) mottles, noderate coarse subansular blocky, friable, nomeffervescent, less clay than 89-141cm., Clear to abrupt boundary.	로	503- 518 0U (198-204)	trown (7.5YR5/4) and reddish brown (5YR5/4) silty class with common fine sellowish brown (10YR5/4) Fe mottless slightly effervescents few thin grazish brown (25Y5/2) coats in vers fine poress versionet househouse	ថ
157 - 185 A1E1 (-62 - 73)	fine), motthed dark brown (10YR3/3) and dark vellowish brown (10YR4/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, clay content similar to 89-141cm, clear boundary.	로	518~ 5 30 +0U 4-209)	clive vellow (2.5V6/5) fine and very fine sand, with light clive brown (2.5V5/4) and gravish brown (2.5V5/2) silt and clave, silt strongly	Ċ.
185-215 Bb1 (-73-85)	finely mottled Pale brown (10YR6/3) and light light light vellowish brown (2.5Ve/4) silt loam, weak coarse subangular blocky, friable, noneffervescent, clay content similar to 141-157cm, gradual boundary.	≢ .			
215- 229 C161(DL) (-85- 90)	pale vellow (2,577/4) coarse silt, with common fine and medium light clive brown (2,575/4) mottles, massive, friable, noneffervescent, clear boundar.	로			
229- 259 C261(Dit) (-90-102)	Pale rellow (2.597/4) coarse sult, with few fine lish clive brown (2.595/4) mottles, weakly laminated very friable, strongly to violently effervescent, very abrust boundary.	뒫			

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	stronely leminated light brownish eray (2.5V6/2) and ML eraxish troom (2.5V5/2) silt and coarse silt, with few large vellowish brown (10VR5/6) Fe mottles, stronely effervescent, abrust boundary.	stronaly laminated very dark arayish brown (2.593/2) ML and lisht brownish aray (2.596/2), and arayish brown (2.595/2) and very pale brown (10987/4) silt and coarse silt, few brown to dark brown (7.5984/2) laminae at base, slightly to stronal,	effervescent, organic laminae, abruet boundary, dark brown (10Y8/3) medium sand and dark brown ML (10Y8/3) dark erayish brown (2.5Y4/2) silt and	silty clay laminated with finer laminae more abundant at top, strongly effervescent, refusal.							
	663-712 DU (261-260)	712- 746 DU (280-294)	746- 770+6U (294-303)								
	₽ c #		Unified Soil assification	로	£	重	뒫	뒫	ฮ	로	분
	iorth of Hww.104 and		Unifi Classif	weak fine rescent:	granular, indarr.	weak fine vescent,	coarse escent, (10VR2/1) rrown idication of	loam, weak ately thick few thin ed faces,	n, with many seak rescent,	and olive stified with ent, few thin in pores, and	brown brown brown 1), and gravish trained in december is silt and aminated, is, silty ock,
	Master core number: 490 Location: SE.NWINWisec.24.TLON.KI3W. Morgan Co., 35ft, north of coft, west of field entrance over ditch Landscape ecsition: medial alluvz3an	none rthen silt loam 45.st.) Leieh, 9-23-84 R. Hallo, 7-29-84	on Description	very dark brown (10YR2/2) silt loam, weak fine subansular blocky, friable, noneffervescent, abrumt boundary.	black (10VR2/1) silt loam, weak fine granular Friable, noneffervescent, gradual boundary.	ver, dark brown (10VR2/2) silt loam, weak fil subangular blocky, friable, noneffervescent, gradual boundary.	dark brown (10YR3/3) silt loam, weak coarse subangular blocky, friable, noneffervescent, common thin to moderately thick black (10VR2/1cla, coats in mores, many thin male brown (10YR6/2) silt coats on med faces, indication weak thin bedding, gradual boundary.	dark vellowish brown (109K4/4) gilt loam, weak coarse subangular blocky, friable, noisefervescent, common thin to moderately this blac! (109K2/1) clay coats in pores, few thin pale brown (109K6/2) silt coats on ped faces, gradual boundary.	light olive brown (2.5Y5/5) silt loam, with mitine tine male rellow (2.5Y7/4) mottles, weak subangular blocks, friable, noneffervescent, gradual boundary.	light olive brown (2.5%5/4) silt loam and olive brown (2.5%4/4) silty clay loam, stratified with few weak laminae, slightly effervescent, few thin ver, dark brown (10%82/2) clay coats in pores, an strong laminations at base, abrupt boundary.	clive brown (2.574/4) and clive brown (2.574/3) silt clas loam, and light vellouish brown (2.576/4). Insht clive brown (2.576/4), and seasish brown (2.576/4), and seasish brown (2.575/4), and seasish loam, stratified in finite seast seast seast seast seast seast seast seast seast loam is strongly to moderately laminated, many reloamsh brown (10765/6) mottles, silty clas loam is massive to subangular block, throughout, noneffervescent to very slightly
MLC-18	Daster Core number: Location: SE.NW-NULC COff. west of fire Landscape Position:	Coffere archeology, none (6) magned soll: Worker silt loam Elevation: 138.1m. (45.st.) Cored by: David S. Leigh, 9-23-84 Described by: Edwin R. Hallo, 7-29-84	Deeth on Soil Horizon (in.) or Zone	0- 25 Ap (0- 10)	25- 60 A1 (-10-24)	80-84 A3 (24-33)	84- 125 B2t (33- 49)	125- 182 B3t (4%- 72)	182 221 C1 (-72 87)	221- 325 MD (-87-128)	325~ 663 MD (126-261)

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Master cofe number Location: 66, NW, N	nice.17 Master core number: 401 Location: SE.NW.NW.Sec.24.116N.KI3W. Morean Co., midwa, between MLC-17 and	-17 and	210- 258 Cb1(MDU) (-83-102)	7.6	ヹ
MLC-10 Landscape Position: Surface archeologic	MLC-10 Landscape Position: medial alluvial fan Surface archeologis none			Thock, to make yet at base, frishie, very simplicy effectivescrip west in ambinated at base, very struct boundars.	
Sic marked soil: Elevation: 136-yn Cored by: David S Described by: Edu	SOS marred soil: Worthen silt loam Elevation: 136.9m. (4494t.) Cored b.: David S. Leigh. 9-23-63 Described br: Edwin R. Halic. 7-29-84		256- 280 MDU (102-110)	light clive brown (2.5%5/4) silt loam, with common fine dark (ellowish brown (10%84/6) Fe mottles, weal subangular blocks, firm, very slightly effervescent, clear boundary.	룯
Depth on Soil Horizon (in.) or Zone	Description	Unified Soil assification	280- 340 DU (110-134)		Ę
0- 32 AP (-0-13)	ver, dark brown (10YR2/2) silt loam, weak fine subangular blocky, friable, noneffervescent, abrupt boundary.	뒾	340- 442 IVB363	vescent, moderate laminations in lower 20cm., it boundars. exprass brown (2.574/2) silts class loams	ರ
32- 57 A1 (-13- 22)	very dark brown (109K2/2) silt loam, moderate fing granular, friable, noneffervescent, moderately bioturbated, clear boundary.	보	(134-174)	with man, large dark vellowish brown (10783/5) mottles, weak subangular block, firm, noneffervescent, common thin very dark gravish brown (2.573/2) and dark gravish brown (2.574/2) clay coats in pores, clear boundary.	
57 - 94 B2t (22 - 37)	dark rellowish brown (100R4/4) silt loam, moderate medium subarbular blocks, friable, nonetfervescent, mann thin very dark gravish brown (100R3/2) silt and clar coats in pores and on ped taces, moderately bioturbated, clear boundary.	Ę	442- 548 VCb3(DU) (174-216)	ish stav 575/4) silt 541 Joan, verv 5cent, few 76) Fe	
94-130 B3t (37-52)	dark brown (10VR3/3) heavy silt loam, with many fine yellowish brown (10VR5/4) mottles, moderate medium columnar, friable, noneffervescent, many thin very dark gravish brown (10VR3/2) silt and cla, coats in pores and on Ped Faces, Clear	로	548- 563 UU (216-222)	d ormanic 11t. bundant undan.	JO .
132-152 01	beendars. sellowish brown (100/RS/4) silt loam, with many	룯	563- 570 OU (222-224)	medium slightly	ē
(52- 60)	fine dark rellowish brown (109R4/4) and dark rellowish brown (109R3/3) mottles, and few fine dark vellowish brown (109R4/6) mottles, moderate coarse subangular blocky, friable, noneffervescent, common thin dark brown (109R3/3) clar coats in pores, abruet boundary.	, t	570- 575+DU (22:-226)	to strongly effectescent, clear boundary. light ollive brown (2.579/4) silt, medium sand, strongly effectescent, refusal.	ď.
152- 186 Altı (60- 73)	dark brown (10VR3/3) silt loam, with few fine dark vellowish brown (10VR4/4) mottles, weak subangular blocky, friable, noneffervescent, common thin dark brown (10VR3/3) clay coats in pores, clear boundary.	분			
186- 210 Bt.1 (-73- 63)	light clive brown (2.5V5/4) silt loam, with few fine vellowish brown (10VR5/6) and with many findark vellowish brown (10VR4/4) mottles, weak subangular blocky, friable, slightly effervescel common thin dark brown (10VR3/3) clay coats in pores, clear boundary.	ine ML ine inent,			

18 1.6 26				MLC-21		
Master core number: 402 Location SE:NE:NW.Sec.25.T16N.K.? and 60*F. north of Hw. 104 Landscape Position: Bug Island cha Surface archeologic none 507 mapped soil: Lahogue sand: loc Elevation: 134.4m. (441*t.) Cored hi: David S. Leigh: 9-50-83 Described bi: Edwin R. Hallo: 7-30	Master core number: 402 Location: SE.NE.NW.Sec.23.T16N.K.3W. and 60Ft. north of Hu 104 Landscape position: Bug Island channel Surface archeologis none 507 mapped soil: LaHusus sand, loam Elevation: 134.4m. (441ft.) Cored hi: David S. Leish, 9-30-83 Described hi: Edwin K. Hailo: 7-30-84	Master core number: 402 Location: SE.NE.NNJ.Sec.23.Tich.K.3W, Morean Co., 20ft.east of drainage and 60Ft. north of Hus. 104 Landscape Postition: Bug Island channel Surface Prostition: Bug Island channel Surface at Prostition: none Surface at Soil: Lanceus sand. loam Elevation: 134.4m. (441ft.) Cored bi: David S. Leigh, 9-30-83 Described bi: Edwin K. Hailo: 7-30-64	Davide dittor	Master core number: 493 Location: SW.NE.NW.Sec.23; MLC-20 at field boundard Landscape position: distal Surface archeology: none SUS mapped soil: Morthere Elevation: 134.7m. (442ft; Cored by: David S. Leigh, Described by: Eduin R. Hau,	Master core number: 493 Locations SW:NE:NW:Sec.23.T16N:K13W. Morean Co., midua: between MLC-16 MLC-20 at field boundar. Landscare Position: distal alliuvial fanEus Island channel SU-face archeology: none SUS mapped scill Worther silt loam. Elevation: 134.7m. (442ft.) Cored by: David S. Leish: 9-30-83 Described by: Edwin R. Hauir, 7-30-84	01.0 9
Depth om Soil Horizon (16.) or Zone	noz1	Description Cla	Unified Soil Classification	Depth on Soil Horizon	Description	Unified Soi Classificatio
0- 30 AP (0- 12)	black (10VRz/1) si friable: noneffery	black (10YRz/1) silt loam, weak fine granular, friable, noneffervescent, abrumt boundary,	¥	0- 97 GL (0- 38)	solum, silt logm, gradual boundar	뒫
3055 A3 (-12-22)	Vers dark star (10 subarsular blockr. clear boundars.	vers dark stas (10YR3/1) silt loam, weak medium subangular blocks, friables noneffervescents clear boundars.	ž	97- 155 C(DU) (38- 61)	light olive brown (2,5V5/4) silt loam to silt, with few fine dark vellowish brown (10VR4/6) Fe mottles, weak subansular block,, slightly	Ĕ
55- 62 B1 (-22- 32)	very dark pray (10VK3/1) silt loam medium subangular blocky, friable, noneffervescent, clear boundary.	ver, dark ara, (10vR3/1) silt loam, moderate medium subangular blocky, friable, noneffervescent, clear boundary,	뒾	155- 183 MDU (61- 72)	errervescent, abrupt boundary. finely mottled light vellowish brown (2.576/4) and light brownish mex (2.57 $\xi/2$) silt, and finely	ਵ
82- 111 B2t (32- 44)	dark brown (100M3/3) silty fine brown to dark brown C strong medium columnar, fil continuous thin very dark coats in Pores and on Ped	dark brown (109R3/3) silty class loam, with many fine brown to dark brown (7.59K4/4) mottles, strong medium columnar, film, noneffervescent, continuous thin very dark gra. (109K3/1) class coats in Pores and on Ped faces, clear boundary	ರ .		mottled light olive brown (2.5%5/4) and olive brown (2.5%4/4) heavy silt loan, stratified, with many fine dark vellowish brown (10%82/2) Fe mottles, strongly to violently effervescent, variable, abruet boundary.	q
111- 162 B3t (44- 64)	brown to dark brown with man floe dar mottles, moderate noneffervescent, m	brown to dark brown (7.5YR4/4) silts clay loam, with many fine dark sellowish brown (10YR4/4) mottles, moderate coarse columnar, firm, noneffervescent, many thin very dark bray (10YE/1) clay coats on ped faces and in pores.	ತ	91)	dark gravish brown (2.574/2) silt, clav loam. with man, fine dark vellowish brown (10783/6) Fe mottles, weak subangular blocky, strongly effervescent, few thin dark gravish brown (2.574/2) clav coats in Pores, gradual boundary.	ว
162- 202 HC (0U) (-6480)	abrust boundary. stratified very da to dark brown (109Ke/1) silvy me single grain, loos	abrupt boundary. stratified very dark gray (109KS/1) loam, brown to dark brown (109KA/3) medium sand and dark gray (109KA/1) silty medium sand, very friable to single grain, loose, noneffervescent, abrupt	뒫	230- 322 0L (91-127)	dark prayish brown (109K4/2) heavy silt loam, with many fine dark vellowish brown (109K5/6) Fe mottles, massive, noneffervescent to very slightly effervescent, variable, few Irotovina of silt from 255-283cm., abrupt boundary.	로
202- 538 DL (80-212)	boundary. lisht olive brown (2.5Y5/4) mediu noneffervescent, abruet boundary.	boundary. 	g.	522- 371 DU (127-146)	practsh brown (2.595/2) stilt, with common fine and medium dark vellowish brown (10983/6) Fe mottles, massive, to moderately laminated at base, strongly effervescent, two large krotovina? at	Ē.
538- 605 OL (212-238)	dark brown (10YRS/ very fine mebbles, boundary.	dark brown (10VKS/3) silty medium sand with few very tine mebbles, nonetfervescent, abrupt boundary.	ā.		top of unit slightly redder than (104R5/2), few laminae of poorly softed medium and fine Pebbles in last 15cm., very abrupt boundar.	
605- 672 DL (238-265)	light clive brown (2.5Y5/4) moorl to ver coarse sand with many ver noneffervescent, abrumt boundary.	light olive brown (2.5Y5/4) Poorly sorted medium to very coarse sand with many very fine Pebbles, noneffervescent, abrumt boundary.	73 S	371- 549+DU (146-216)	light olive brown (2.595/4) medium and coarse sand, with few thin gravish brown and very dart gravish brown (2.595/2/2) coarse silt to very fine sandy silt thin laminae in last	ÿ
672-720 OL (265-283)	Stratified dark br Coarse sand mith f nonettervescent: a	stratified dark brown (10VR3/3) silt medium and coarse sand with few very fine mebbles, noneffervescent, abruet boundary.	MS P		70cm., strongly effervescent, refusal.	
720- 744+DL (283-294)	olive brown (2.574/4) poover, coarse sand with man noneffervescent, refusal,	olive brown (2.5V4/4) poorly sorted medium to very coarse sand with many very fine pebbles, noneffervescent, refusal.	MS.			

MLC - 22

ML6-22		MLC-23		
Master core number: 404 Location: SwiSE Swize. Dollton KiSW. MLC-S north side or hardton road a Landscheeperosition: distal allocial SGS marred soil: nois SGS marred soil: Lahosue sand loan Elevation: 134.7m. (442ft.) Cored br: David S. Leish: 9-30-83 Described by: Edwin R. Hallo. 8-5-84	Master core number: 494 Location: SWISE.SWISE.23.TICN.RISW. Morean Co., midway between MLC-c and Location: SWISE.SWISE.23.TICN.RISW. Morean Co., midway between MLC-c and Location: Swise of hardtoe road and Coft. cart. Filed entrance. Landscape epoptition: distal allovasi .est. but island channel. Surreace accheology: none Surreace accheology: none SCS marreace soil: LaHogue sand, loam Elevation: 134.7m. (442)t.) Cored by: Layid S. Leiph: 9-30-83 Described by: Equin K. Hallo, 8-5-84		Master core numbers 495 Location: SWINNINNS.c.23.TION.KISW. Morean Co., 55ft. north of Hw., 104 and 35ft. east or field boundar. 35ft. east or field boundar. Survai she pression: Bluffs Terrace Survai she pression: Bluffs Terrace 505 mapred soil: LaHosue sand, loan Elevation: 154.7n. (442ft.) Cored bi: David S. Leish: 10-5-63 Described bi: Edwin R. Halic, 7-30-83	of Hei. 104 and
Depth om Soal Horazon (an.) or Zone	Unified Soil Description Classification	Soil Depth om Soil Horizon tion (ii.) or Zone	orizon ne Description	Unified Soil Classification
0 34 A1 (- 0 13)	black (loyR2/1) silt loam, weak medium subansular. ML blocky, friable, nomerfervescent, abrupt boundary,	0-130 0F 10 0E-0 1	solum, fine sandy loam, clear boundary	ű.
34 193 OL (-15~-76)	turied solum of LaHosum sand, loam, clear boundary. SP	P 130- 180+0L (51-71)	brown to dart brown (10984/3) moorly morted fine to very coarse sand, many very fine and fine octation and the sand many very fine and fine	d fane SW ne
19558 C(MOL) (-7694)	dark brown (10VK3/3) fine sands loam, with mans ordered underse dark sellowish brown (10VK3/4), dark sellowish brown (10VK3/4), brown (10VK3/6), pale brown (10VK6/3) Fermittles, weakl, stratified with weak coarse subangular blocks, nonetfervescent, clear boundary.	à.	subrounded, refusal,	
238-277 MbL (-94-160)	scales brown (2,575/2) fine sandr silt, with man, fine and medium dark vellowish brown (10784/2) and dark vellowish brown (10784/4) Fe mottles, weakl, stratified noneffervescent, some sandier vues, ver, abrupt boundar.	à.		
277~ 357 tig (198~141)	olive stat (SYS/2) silt, with common medium brown ML (7.5YKS/2) very faint mottles, strongly laminated strongly effervascent, few to common light vellowish brown (2.5Y6/4) and olive vellow (2.5Y6/6) fine sand laminae increasing in frequency with depth, very abrupt boundary.			
957- 425+EQ (141-167)	light ollive brown (2.5V5/6) fine sand, with few srailsh brown (2.5V5/2) mottles, with slight reddish brown hue, silt, clay laminae strongly effervescent, refusal.	۵		

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light vellowish brown (2.576/4) poorly sorted SP fine sand, few thick leminae of very dark gray (5YS/1) coarse silt, as below, slightly effervescent, very abrupt boundary.	ver, dark stay (5Y3/1) coarse silt, massive, ML violently effervescent, very abrust boundary.	enavish brown (109R5/2) moderately sorted medium. SP and coarse sand, very few very dark eray (5Y3/1) coarse language toward hase, allegely effective or the coarse languages.	Very Abrupt Doundary.	stratified very dark eray (5Y3/1) silt, massive to ML strongly laminated very dark erayish brown (10YR3/2) and light yellowish brown (2,5Y6/4) silt and very fine sand, and dark yellowish brown (10YR3/4) and light yellowish brown (10YR3/4) and light yellowish	From: A. (1977) Time wath dail ready time wath Violently, efferwescent, some very dark gravish brown (1978)/2) silt has uncarbonized organic matter, refusal,					
268- 300 pu (113-118)	300- 311 UU (118-122)	311- 464 DU (122-159)		404- 550+UJ (159-217)						
			Unified Soil	불	롼	로	로	ರ	£	ฮ
Master core number: 496 Location: SW-SE-SE-Sec.26.TicN.Ri34, Morean Co., southeast corner of M.Hinners Propert. Landscape Position: medial alluvial fan	TOTAL STATE STATE TO SEE THAT TO SEE TO SEE THAT	Described by: Edwin R. Hajic, 8-1-84	Describition	assive, fr	black (109K2/1) heavy sult loam, moderate fune subangular block, firm, noneffervescent, clear boundar,	very dark brown (10YR2/2) heavy silt loam, moderate medium columnar, firm, noneffervescent, clear boundary.	dark wravish brown (2.574/3) silt, with many fine relicuish brown (10YR5/6) Fe mottles, moderate coarse subansular blocks, noneffervescent, many ver, dark wrav (10YR2/2) heavy silt loam large krotovinas, many thin to moderately thick very dark wranish brown (10YR3/2) silt and clay coats in mores, few on med faces, wradual boundary.	finel, mottled ollve brown (2.594/4) and very dark grainsh brown (2.593/4) sulty clay loam, with many fine vellowish brown (1098%/6) Fe mottles, moderate coarse subangular blocky, firm, noneffervescent, common thin very dark grainsh brown (10983/2) and very dark brown (10983/2) silt and clay coats on ped faces, gradual boundary.	dark pravish brown (2.574/2) and light olive brown (2.575/4) silt loam, with common fine and medium dark vellowish brown (10764/6) mottles, weak coarse subangular blocky, very slightly to slightly effervescent, common thin dark pravish brown (2.574/2) and very dark pravish brown (2.573/2) clay coats in pores, most of lower half of unit is one large krotovina-fill consists of very dark pravish brown (2.573/2) loam to silty clay loam, pradual boundary.	clive grav (595/2) silts clas to clay at base, with man, fine dark velsowish brown (10984/6) Femottles, massive, slightly efferoescent, sand content increases with depth, very abrupt boundary.
Master core number: Location: SW-SE, GE, S. H. Hinners Propert. Lendacape Position:	Multiple archeologi, none MCO marred soil: Littletch silt lo Electron: 134,7m. (4424) Costa to fisca o casta to marred	Described by Edel	Depth on Soil Horizon (16.) of Zone		54- 65 A15 (13- 26)	65- 104 B1b (26- 41)	104- 180 B2bt (41- 71)	180- 211 B364 (71- 63)	211- 266 Cb (63-105)	266- 288 MUU (105-113)

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Master core number: 497 Locations NE.NE.Sec.15.TIGN.RIS 15ft. west of fence line Landscare Position: Bug Island Cha Surface ar Cheology: none SUS mapped sols: Beaucoup silts of Elevation: 132.3m. (434ft.) Cored by: David S. Leigh. 10-5-83 Described by: Eduin R. Halle, B-4-	Master core number: 497 Locations NE.NE.NE.Sec.15.TION.RISM. Morean Co., 400ft, south of levee and 156t, west of fence line. Landscape position: Bus Island channel. Signate achecious incre. Signate achecious silts clar loan. Cores byt David S. Leists 10-5-83 Described byt Edwin R. Masic, 6-4-84	P	# V # E T W # C # E T W #
Deeth om Soal Horizon (1n.) or Zone	Description	Unified Soil	Dep
0- 24 AP (0- 9)	verk dark brown (10YR2/2) siltr cla. loam. compacted, firm, noneffervescent, abrupt boundary.	נר	-
24: 44 B1 (9- 17)	ver, dark brown (109K2/2) siltr Cla. loam, moderate fine subangular block,, firm, nonettervescent, clear boundary,	ช	47 (2%
44- 73 B21t (17: 29)	ver, dark pravish brown (109KS/2) clay loam, with many fine dark vellowish brown (109K3/4) mottles, anderate medium Prismatic, firm, noneffervescent, continuous very dark pray (109K3/1) clay coats on ped faces and in pores, clear boundar.	ರ	
73- 100 B22t (29- 39)	dark erasish brown (10VR4/2) clay loam, with many Fine dark vellowish brown (10VR3/4) mottles, moderate medium prismatic, firm, noneffervescent, man, thin ver, dark eray (10VR3/1) clay coats on ped faces and in pores, gradual boundary.	ರ	306 0118
100-135 Bot (39-55)	brown to dark brown (7.57K4/2) sands clay loam to sands loam at base, with many fine dark vellowish brown (10YK3/4) and dark sellowish brown (10YK3/4) mottless weak coarse subansular blocks, film nonefervescent, few thin very dark pravish brown (10YR3/2) clay coats on ped faces, clear boundars.	ಕ	
135- 150 C1(OL) (53- 59)	very dark pravish brown (109K3/2) loamy sand, massive, very friable, noneffervescent, sand is nedium to coarse, poorly sorted, with few very fine pebbles, top of unit marked by a fine pebble band, clear boundar,	g.	
150- 284 OL (59-112)	dark brown (10YR3/3) to brown (10YR5/3) at base medium sand with small amount of silt, no distinct stratification seen, noneffervescent, clear boundary.	a. o	

MLC-26

ner of	Unified Scil	a,	ট ্ট	, and a second	ŭ. W
4. Morean Co., at the northeast corner of loam	Unit Description Classi	solum, fine sand, clear boundary	solum, fine sand, loam, clear boundar,	dark vellowish brown (10YRS/4), dark vellowish brown (10YR4/6) and dark vellowish brown (10YR4/6) loam, sand with strata of sand and sand loam, stratified sand is noneffervescent, sand is medium but only moderately sorted, from 201-255cm, verifine and fine methles are common, indeterminate boundary.	dark vellowish brown (10VK4/4) moderately sorted medium sand, noneffervescent, refusal.
Master core number: 498 Location: NE.NE.NE.15c.15.T16N.K13W. I a rectangular block of oak thees Surface position: Block of oak treace Surface archeology: none 50 mapped soil: Alvin time sandr loam Elevation: 134.7m. (442*t.) Cored by: David 5. Leigh: 10-5-65 Described by: Edwin R. Hauic, 6-4-84	r 120n	solum, fine san	solum, fine sa	dark vellowish brown (10983/6 loams sand wit stratified san but only modern fine and fine boundary.	dark vellowish medium sand: D
Master core number: 498 Location: NE.NE.Sec.15.T a rectangular bloch of oallandscape position: Bloffs Surface archeology: none 905 mapped soil: Alvin fine Elevation: 134.7m. (442f.) Cored by: David St. Leigh, 1 Described by: Eduin R. Habit	Deeth om Soal Horazon (an,) or Zone	0- 74 OL (0- 29)	74- 152 OL (29- 60)	152- 300 OL (60-118)	300+ 320+0L (118-126)

Comments: none

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dark vellowish brown (109K3/4) and dark brown (109K3/3) medium and fine sand, noneffervescent, refusal,

dark brown (10YR3/3) loam, sand, no stratification seen, noneffervescent, clear boundary,

284- 305 GL (112-120) 305- 400+0L (120-157)

MLC-27

C ತ 0- 38 (111) Unified Soil Classification Locations NM.NE.NE.Sec. 15. Tibn. RISM. Morean Co., at the northwest corner of Š SP dark vellowish brown (109R4/4) fine and medium sand, common dark vellowish brown (109R3/6) iron stained bands, noneffervescent, refusal. solum, fine sand, with some silt, clear boundary Description Landscape Position: Bath Terrace Surface archeolog: none SCS mapped Soll: Flannfield loams fine sand Elevation: 135.3m. (444ft.) (ord by: David S. Leish: 10-5-63 Lescribed b:: Edwin R. Halls: 3-4-84 から the block of oak trees Derth on Soil Horizon Master Core number: or Zone 0- 111 OL 111- 284+0L (44-112) (0-44) (34.)

MLC-28

Classification Unitied Soil Master core number: 500 Location: SE.NE.NW.Sec.25.T16N.K15W. Morean Co., 35ft, south of Beauchame Rd. and 10ft, west of wheat field boundary at first telephone role west of Hishway 100 Ę olive brown (2.574/4) and olive brown (2.574/3) ML silt loam, with man, fine dark sravish brown (2.574/2) mottles in lower half, weak coarse subangular blocky, noneffervescent, clear boundary. å 뒫 Ę 뒫 뒫 Ę 9 (2.5Y3/2) organic silt, clay, few fine sand laminae, black (2.5Y2/0) organic silt, strongly laminated, gravish brown (2.5V5/2) silt, with many fine and medium vellowish brown (10VR5/6) mottles, noderately to strongly laminated at base, gravish brown (2.575/2) heavy silt, with many fine vellowish brown (109R5/6) mottles, slightly (2.575/2) sult, with many fine rellowish brown (10985/6) mottles, weally stratified, slightly effervescent, clear boundary. light olive brown (2,5Y5/4) and grainsh brown dark rellowish brown (10YR4/4) fine sand, few dark brown (10YR3/3) silt loam, weak medium black (2.5Y2/0) and very dark gravish brown subangular blocks, noneffervescent, clear noneffervescent, indeterminant boundard. buried solum, silt loam, clear boundary stronely effervescent, abrupt boundary. noneffervescent, very abrupt boundary. gravish brown (2.5Y5/2) silt laminae. organic, noneffervescent, refusal, Description effervescent, clear boundary, Landscape positions medial alluvial fan Described by: Edwin R. Hajic, 8-5-84 SCS mapped scill Worther silt loam Elevation: 140.8m. (462ft.) Cored b.: David S. Leish: 10-4-83 boundary. Surface archeology: none Deeth om Soul Horizon or Zone 193- 319 CP(MDL) 319- 432 MDU 432- 446 MDU (170-176) 448- 632 MDU (176-249) ಠ 632~ 653 DL 782- 810+DF 38- 193 (653- 685 (257-270) (248-257) (270-319) (76-126) (126-170)

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Master core numbers 501

Locations SE.NE.NNE.NNiSec.14.T16N.K13N. Morean Co.: 35ft.west of hardtop rd. and 75ft.scuth of scuthernmost meand post on west side of road

Master core number: 502 Location: SM:NE:NW:Sec.14.Tion:RISM: Morean Co.: 30tt. east of ditch and 350ft, south of levee Landscape Position: Bue Island channel

Surface archeologys none

OK -)기보

Unified Soil Classification 뒫 ŝ 턴 뒫 뒫 뒫 Ę Ę 로 medium subangular blocks, friable, noneffervescent, common thin very dark brown (10982/2) silt and clas, coats on red faces and in pravish brown (2.5%5/2) silt loam, with many fine light clive brown (2.5%5/6) mottles, weak medium subangular blocks, friable, very slightly effervescent, few thin dark pravish brown (10%64/2) clay coats in pores, very abrupt massive, slightly effervescent, common fine mores with Fe linings, few vogs filled with medium sand sand, stratified, slightly to strongly effervescent at base, common thin to thick laminae of '2.5V5/2, 5V4/2, 5V4/3) silt, loam and silt, cla., refosal, dark gravish brown (2.574/2) silt loam, with many fine clive brown (2.574/4) mottles, moderate light clive brown (2.5Y5/6) and dark sellowish brown (10Y84/6) mottles, moderately to strongly laminated at base, common vers fine sand laminae. very dark brown (10YR2/2) silt loam, moderate fine subangular blocky, friable, noneffervescent, clear boundary. olive brown (2.5Y4/4) and brown (7.5YR5/2), and slightly darker than clive (5Y4/3) coarse silts light vellowish brown (2,5Y6/4) fine and medium preentsh bray (SGVS/1) silt, compact, massive unth few very fine sand laminae, very slightly effervescent, very abrupt boundary. oracish brown (2.5V5/2) silt, with common fine very dark brown (10YR2/2) stilt loam, weal fine greenish bra: (SGYS/1) coarse silt, massive. strongly effervescent, very abrupt boundary. slightly effervescent, abrupt boundary. subangular blocky to massive, friable, noneffervescent, abrupt boundars. Description from below, atrust boundary. Pores, clear boundary. SCS mapped soil: Darwin silty clay Elevation: 134.7m. (442*t.) Cored by: David S. Leish: 10-11-83 Described by: Edwin R. Hausc. 8-4-84 Deeth on Soil Horizon (in.) or Zone 124- 227 C(MDU) (49- 89) 240- 248 U/EU (94- 98) 248-255 UU (98-100) Œ, Ą 82 3 255- 300+DU (100-118) ď 227- 240 | [89- 94) **4** 72 124 49) 37 1001 17) 72-99 26-10-43-Classification Unified Soil å Š 턴 Ę 뒫 뒫 fine), mottled ver, dark pravish brown (10983/2) and ML lisht olive brown (2.575/4) silt loam, moderate fine 重 erasish brown (2.5%5/2) silt, with common fine and medium dark vellowish brown (10%84/6) Fe mottles, massive, slightly effervescent, gradual boundary. dart grainsh brown (2.574/2) Poorty sorted coarse sand, abundant pebbles, few zones with uncarbonized organic matter, strongly effervescent, refusal, dark granish brown (2.584/2) and minor dark greenish grar (5684/1) fine and medium sand, etratified common sillt fine sand and coarse fine sand and claim laminae, strongly efferescent, few zones with uncarbonized organic matter, gradual black (109K2/1) silt loam, moderate fine mranular, light (ellowish brown (2.576/4) silt loam, with man, fine ollive rellow (2.576/6) mottles, weak medium subangular blocky, strong to violently effervescent, few coarse carbonate concentrations. lisht ollive troum (2.5%5/4) and lisht ollive brown (2.5%5/3) silt and coarse silt, with mann medium and fine lisht ollive brown (2.5%5/6) mottles. strongly strongly effervescent, moderately to strongly afterwascent, moderately to strongly aminated, common light vellowish brown (2.5%6/4) ver, fine sand laminae, top of unit marked by 4cm, zone of strongly laminated very dark granish brown (2.583/2) silt, very abrupt subangular blocky, friable, noneffervescent, dark gravish brown (2.5Y4/2) and dark grav (5Y4/1) sult, coarse sult and fine sand, moderately to strongly laminated, strongly friable, noneffervescent, clear boundary. moderatel, bioturbated, clear boundary. effervescent, very abrupt boundary. Description Lendscape position: Bus Island channel Surface archeology: none SCS mapped soil: Tice silt: cla. loam Elevation: 133.5m. (4364t.) Cored bi: David S. Leish: 10-11-85 Described bit Edwin R. Haile, 8-3-84 ahrumt houndary. trebundar v Depth on Soul Horizon or Zone 238 ((MDU) 94) 336 - 520 DZUU (132-205) 3 526- **6**00+**5**0 (205-236) Ē 갩 Ξ <u>4</u> 238-364 (94-120) **ଜ**ୁ 140 304- 336 (120-132) 5 6 70 (14.) 33

Master core number: 503
Location: SWiNE;NWiSec.15;Ti6N:K13W; Morean Co.; 25ft, east of drainase ditch due east of bis tree in front vard of farm house Landscape Position: distal alloyia) fan--Bus Island channel Surface archeolos: none 5C5 mapped soil: Beaucour silt, clar loam Elevation: 134,1m, (434ft) Cored by: David S. Leish: 10-12-83
Described by: Edwin A. Hauic, 8-3-84

Depth on Soil Horizon (10.) or Zone	Description	Unified Soil
0- 169 OL (- 0- 67)	solum, saltr clar loam, clear boundary	ដ
169- 235 C#(MDL) (67- 93)	dark granish brown (2.574/2) to olive gran (575/2) at base heavy loam to fine sandy loam, with man, fine dark vellommsh brown (10784/6) Fe mottles, weakly stratified, nonetfervescent, clear boundary.	ئ :
235- 308 UU (93-121)	olive star (5Y5/2) silt and stavish brown (2.5Y5/2) sand, stronely laminated mostly with silt, towards base some laminae approach (7.5Y85/2) colors, with many fine and medium dark vellowish brown (10Y84/6) Fe mottles, stronely effervescent, abrupt boundary.	ML ish cent,
303- 360 DU (121-142)	light vellowish brown (2.5Y6/4) very fine sands very slightly effervescent, indeterminant boundars.	d, SF
360- 460 DU (142-181)	olive brown (2,5Y4/4) fine and medium sand, slightly effervescent, indeterminant boundary	д Э
460- 510+DU (181-201)	light olive brown (2.575/4) medium sand, slightly effervescent, very few dark gray (574/1) coarse silt and silt laminae, refusal.	htly SP se

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Master core number: 504 Location: SE:NE:NE:Sec.15:T16N:K13W: Morean Co.: 125ft. we directly west or 5th powerline polyton.	san Co.: 125ft, west of Hwy.100 and Willow creek leves	pue oc	388- 620 DUU (153-244)	dark ara: (574/1) silt and fine sand: silts strongly laminated: strongly efferyescent: indeterminant boundary.
Landscape Possitioni distal alluvial fan Survece archeolosi none 60 mapred solli Beaucoup silt, clai loam Elevationi 134.4m. (441ft.) Cored bi: David S. Leish: 10-13-83 Described by: Edwin R. Hallo, 8-2-84			620- 735+UU (244-289)	dart sra, (574/1) mebb), coarse sand and silt stratified, mebbles are medium to ver, fine, subrounded, mourly sorted, mottles, violently effervescent, refusal.
Deeth on Soil Horizon (in.) of Zone	Unifi Description Classif	Unified Soil Classification		
black (10VR2/1) silt loam, weak fine friable, strongly effervescent, clear	loam, weak fine pranular, ervescent, clear boundary.	륃		
ver, dark graitsh brown (10983/2) silt l moderate medium subangular blocki, friab slightli, effervescent, mradual boundary.	ver, dark grainsh brown (10VR3/2) silt loam, moderate medium subansular blocki, friable, slight), effervescent, mradual boundark.	호		
very darl gravish brown (2.573/3) heamith man, fine dark vellowish brown (mottles, moderate coarse subargular beliabith effervescent, many thin very gravish brown (2.573/2) clay coats on gradual boundary.	very dark gravitsh brown (2.573/3) heavy silt loam, with man, fine dark vellowish brown (10%84/6) Femottles, moderate coarse subangular blocky, firm, slightly effervescent, many thin very dark gravitsh brown (2.573/2) clay coats on Ped faces, gradual boundary.	로		
light velicuish brown (2,5%6/4) a brown (2,5%5/4) silt loam, with m velicuish brown (10%6/6) Fe mott subangular blocky, firm, slightly one krotovina of very dark graxisi 5%3/2) silt loam, clear boundary.	light vellowish brown (2.5%6/4) and light ollive brown (2.5%5/4) silt loam, with many the dark vellowish brown (10%6/6) Fe mottles, weak coarse subangular blocky, firm, slightly effervescent, one krotovina of very dark graxish trown (2. 5%3/2) silt loam, clear boundary.	로		
olive (5Y4/3) silts clay loam, with medium dark vellowish brown (10YR4/6) common fine trown (7.5YR14) mottles, subansular blocks, nonefervescent, ferrar (5Y4) clay coats on red faces one subrounded chert rebble at 153cm.	olive (SY4/3) silft clay loam, with many fine and medium dark vellouish brown (10YR4/6) Fe and with common fine brown (7.5YR14) mottles, weak coarse subanatur blocky, noneffervescent, few thin dark eray (5Y4/1) clay coats on Ped faces and in Pores, one subrounded chert Pebble at 153cm., clear	뒫		
olive gra, (595/2) silt loam to clay with man, fine dark vellowish brown (mottles, massive, firm, slightly effeteu thin dark gra, (594/1) clay coats few k otovina of fine sand; loam, san both increase with depth, clear bound	olive gra. (5%5/2) silt loam to clay at base, with man, fine dark vellouish brown (10%84/5) Fe mottles, massive, firm, slightly effervescent, few thin dark gra, (5%4/1) clay coats in Pores, few k otovina of fine sand; loam, sand and clay both increase with depth, clear boundary.	뒫		
dark olive grav (5Y3/2) and very dark (5Y3/1) silt and fine sandy silt, and (10YK6/2) fine sandy moderately to st laminated, strongly effervescent, verboundary.	(2) and very dark bray is sandy silt, and Pale brown moderately to strongly refervescent, very abrupt	¥		
light brownish gray (109K6/2) fine dark clive gray (593/2) thick silt strongl, effervescent, very abrupt	(10YK6/2) fine sand with few (2) thick silt laminae, t, very abrupt boundar.	ů. Vi		

MLC-33

Master core number: 505
Location: SENNANE, Sec. 15, TiGN, KISW, Morgan Co., 174m; due west of MLC-32
Landscape Position: distal alluvial Fan
Surface archeologi: none
SUS mapped soils Reaccours silt; cla. loan
Elevation: 134,1m. (440/ft.)
Cored by E David S. Leish: 10-13-83
Described by: Edwin R. Halic, 8-3-84

0- 34 A1 (0- 13)	14	black (10VRE/1) sult loam, weak fune sranular, friable, noneffervescent, clear boundary,	£
34- 74 B1 (-13- 29)	18	very dark era. (10YR3/1) silt, cla. loam. moderate medium columner breating to moderate fine subangular block: firm. ver. slightly effervescent, gradual boundar	3
74- 132 (29- 52)	B2ts	dark stay (10984/1) silts class loans with many fine dark vellowish brown (10984/6) Fe mottles, moderate coarse subansular blocks, fit very slightly effervescent, man, thin black (0982/1) class coats on ped faces and in pores, stadual boundary.	ಕ
132- 163 (52-64)	ED ST to	pravish brown (2.595/2) silt loam, with many fine dark reliowish brown (10984/2) Fe mottles, weak coarse subangular blocks, vers slightly effervescent, many thin dark bravish brown (2.5942) coats in Pores, one large very dark pravish brown (10983/1) heavy silt loam krotovinas pradual boundary.	로
163- 236 (64- 93)	5	lisht brownish srav (2.5V6/2) silt loam, with many fine dark vellowish brown (10VR4/6) Fe mottles, weak coarse subangular blochy to massive at base, very slightly to slightly effervescent, common stayish brown (2.5V5/2) clas, coats in pores, few larse very dark gra, (10VR3/1) heav, silt loam Krotovina, abruet boundary.	로 .
236- 277 MDU (93-109)	Ng.	pravish brown (2,575/2) silty clay, with many fine dark yellowish brown (107R4/6) Fe mottles, massive, very slightly effervescent, clay increases with depth, very abrupt boundary,	ರ
277- 330+UU (109-130)	ren	very dark grav (5V3/1) silt, and gravish brown (2.5V5/2) fine sand, stratified, strongl, effervercent, few fine uncambonized organic	로

Master core numbers 500 Location: SEINEINMISSOLISIIANI, KISW. Morgan Co., 1041, west of treld datch on west side of rield road approx. Soft, north of south end of datch Landscape Position: Bus Island channel

Surrace a checlos: none
SUS marked soil: Beaucour silt. cla. loan
Elevation: 134.1m. (440:ft)
Lescrited b:: Eduin F. Haulo. 8-3-84
Lescrited b:: Eduin F. Haulo. 8-3-84

Unified Soil	Classification
	Description
Depth on Soll Horizon	(1ri.) or Zone

(1r.) or Zone	Description	scatson
0~ 30 AF 0~ 12)	ver, dark brown (109K2/2) silt, clai loam, weak fine granular, ver, slightli eftervescent, clear boundar,	נר
50- 58 B1 12- 23)	black (10YKZ/1) silty clai loam, moderate medium columnar, noneffervescent, common zone of shell framents at top of unit, gradual boundary.	j j
58- 87 B2t 28- 35)	ver, dark gra, (10VR3/1) silt, clar leam, moderate medium and coarse colomnar. nonerfervescent, man, thin black (10VR2/1) clar coats on med faces and in Pores, gradual boundary.	ថ
69- 120 Bilet 55- 47)	dark gra. (109R4/11)tz claz. Common fine dark. CL. sellowish brown (109K4/c) mottles, moderate coarse subangular block. noneffervescent. Common thin very dark gray (109K8/l) clas coats on Ped faces and in mores, clear boundary.	_
120- 15) Bilet (-47- 50)	dark grav. (10VK471) silt loam, moderate coarse subangular block,, ver, slightly effervescent, few thin ver, dark grav. (10VK371) silt, cla, loam krotovina, akrumt boundar	로
151- 195 če (Mbl) (59- 72)	gravish brown (2.5Y5/2) fine sand. I am. with common medium frown (7.5YR5/2) and with few fine dark vellowish brown (10YR4/2) fe mottles, stratified, slightly effervescent, few thin dark grav (10YR2/1), clay coats in Pores, very abrupt boundary.	ŭ. Vi
195- 206 DU (-77- 81))ight brownish grav. (2.5%/2) fine sand, few gravish brown (2.5%5/2) silt laminae, slightly effervescent, abrupt boundary.	ů. Vi
206- 248 tW (El- 98)	clive grav (SVE/2) silt and coarse silt, and dark. ML gravish prown (2.5Y4/2) fine sand, with man fine dark yellowish brown (10YR4/6) Fe mottles in the top Ecm., moderately laminated, slightly effervescent, fine sand also located in some Pores and vugs, very fine shell framents, abrupt boundary.	E Tire
243- 257 UJ 96-117)	dark grav (5Y4/1) coarse silt and silt, and light grav (10YR7/2) fine sand, strongly laminated with source the thicker silt units being massive, strongly to violintly effervescent, very abrupt boundary.	<u>ਵ</u> ੰ

pale vellow (2.5Y7/4) fine sand with few third laminae of dark bra. (5y4/1) coarse silt and silt, strongly effervescent, one silt unit has abundant fine uncarbonized organic matter at about 320cm, and one strongl, laminated silt unit at 370-377cm, refusal.

297- 380+[ii] (117-150)

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deri messive with rew weel laminary strongly efferivescent 417-420cm. laminated as \$14-4020m., very very boundary.

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light brownish gray (2.5V6/2) and grayish brown (2.5V5/2) fine sand, moderately laminated, fourilt and coarse fine sand laminations, strongly effervescent, refusal,

402- 430 UU s (158-169)	430- 455+60 (169-170)	1.1 6.6									
Durmerer the James		Unified Soil Classification	Λ. F	ŭ. 93	ĝ.	CF) CL	로	ਦੇ ਹ ਪੁ	륃	Mr. cundar)
oStt. east of Mr. Dun the other side of the		Unif Classi	L. (1)	e sand, single r boundar	fine sand, cent, abrupt	n with mann Fe mottles, edium, ver	brown (10YES/2 dv leam: tv	medium and relicuish rvescent, two SYRS/Lo, from above res, gradual	to silt at base, Mi ouish brown tending to brown t ton to	ve, strongly	is greateh sand, verv sand, verv sydvi) stilt as v sliabiti, tor indicated v verv abrust bu
Master core number: 50.7 Location: SWINWINWISSELISTION.RIBW. Morean co., oStt. east of Mr. drivewar, due south or small equipment shed on the other side of doct, north of telephone pole with transformer.	ard 83 8-84	[iescraptson	solum, loams fine sand, clear boundar	light vellowish brown (2.576/4) fine sand, single grain, loose, non-effervescent, clear boundar	brown to dark brown (10VR4/3) loam, fine sand, ver, weak thin bedding, noneffervescent, abrupt boundary,	dart eras (10VK4/1) light clas loams with mans fine dark sellowish brown (10VK3/4) Fe mottles noneffervescent, sand is fine and mediums vers abrowt boundars.	thichly laminated very dark gravish brown (10YFS/2) and olive (EYS/2) clay loam and sandy loam, (variegated colors), noneffervescent, abrunt boundary.	olive (5Y5/3) heav, loam, with man, medium and fine olive brown (2.5Y4/4) and dail, sellowish brown (10YK4/6) Fe mottles, noneffervescent, two faint mottles apercaching brown (7.5YK5/5), massive, common zones of sand, loam from above filling vigs, very fine and fine pores, gradual boundary.	eraxish brown (2.5%5/2) coarse silt to silt at with many fine and medium dark vellowish brown (10VK4/2) Fe mottles, faint mottler tending to (7.5%65/2), weak fine laminations at ton to make, ve at base, strongly to violently effectively extremely very abrupt boundary.	dark clive grav (SYB/1) silt, massive, strongly effervescent, very abrupt boundar	dart graitsh brown (2.574/2) and dark graitsh ML brown (2.574/2) coarse silt, silt, light helbenish brown (2.574/4) very fine sand, very strongl, laminated with dark gra, (574/1) silt as above, unit aprears almost contdized, slightly effected at the to strongly effected unith possible bioturbation indicated by pore 135m, with possible bioturbation indicated by pore fills gad disturbed laminae, very abrust boundary.
1 Sec. 15. T16Ni 4 Sec. 15. T16Ni outh or small elephone Pole 1 duns	: none parta loam si (44_rt.) (41_st.) Leish: 10-14 i K. Hallo: S	200	solum, logm	light vellor grain, loss	brown to day	dart wrat (10964 fine dark vellow noneffervescent, abrupt boundart.	thich) laminate and olive (CYS/S) (variesated coloabried coloabrie	clive (5V5/ fine clive from (10VK fairt motti- massive (co filling vig	eravish bromith many F (10VK4/6) F (7.5VK5/2), mass ve at	dart clive effervescen	dark eracing brown (2.55v) ellowish brown in a strong). Tage efforce unit efforce unit efforce (2.50m). Dr. evre fill
Master core number: 507 Location: 5W.NW.NW.5ec.1 drivewar: due south or 40ft, north of telephor Landscape Position: dune	Surface archeology: none SCS magned soul: Searta loam sand Elevation: 154.7m. (44.rt.) Cored by: David S. Leigh, 10-14-83 Described by: Eduin A. Hallo, 8-3-84	Death on Soal Horazon (an.) or Zone	0- 94 OL 0- 37)	94- 121 C 37- 48)	121132 OL (-4852)	132- 157 MDL (-52- 62)	157- 181 07UL (-62- 72)	162- 220 MBL (-72- 87)	220- 27 0 MD U (87-110)	279- 324 UU (110-128)	324- 46 <u>-</u> DU (126-158)

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olive gray (574/2) clay loam to fine said, cla, loam, thinly bedded, moderate internal mising from bioturbation, violently effervescent, common gastropods and bivalves, ver, abrupt houndar,

242- 278 UU (95-109)

276- 300+UU (109-116)

J

dark olive grav (5V3/2) laminated fine sand and clay and silty fine sand, violentl, effervescent, refusal.

MLC - 53

Master core number: 510 Location: SW.SW.NW.Sec.4.TISN.KI4W. Scott Co., .125 m., north of Coon Run levee and 65rt, west, southwest or big cottonwood tree on edge of Bath. Terrace

Landscare position; Bath Terrace Surface archeolog; none SuS mapped soil; Sparte loan, sand Elevation; 135,3m. (444ft.) Cored by: Devid S. Leish, 10-18-63 Described by: Edwin R. Hallo, 7-30-84

Description Deeth on Soil Morizon (110.) or Zone

Death on Soil Horizon (in.) or Zone	con Unified Soil Description Classification	Unified Soil Classification
0- 22 C1 (0- 9)	dark loos	n, SF
22 40 A1 (-916)	very dark granish brown (109KS/2) fine sand, weak fine subangular blocks, noneffervescent, abrupt boundars.	· weak GP rupt
40~ 108 B2 (1c~ 43)	dark brown (10YKS/3) tine fand, week medium subangular blocks, loose, gradual boundars.	a. V
106 170+£ (-43 67)	vellowish brown (10VR5/4) fine sand and loans fine sand, stratified to single grain, loose, noneffervescent, refusal,	a. 00

MLC-39

Master core number: 511

Location: SWiNW.NW.Sec.4.T15N.K13W. Scott Co., between fK tracks and sand, rad : 125 m.; north of Coon Kun levee

Landscape Position: Both Terrace
Surface archeologi: none
SCS mapped soil: Sparta loan, sand
Elevation: 155-6m. (445-7)
Cored by: Devid S. Leigh: 10-18-83
Described by: Edwin K. Halic, 7-30-84

(in.) or Zone	Zon Description Classification	Classification
0- 19 A1 (0- 7)	dark brown (10YR3/3) fine sand, single erain. loose, noneffervescent, gradual boundar.	in, SP
19- 49 B2 (7- 19)	dark vellowish brown (10VR4/4) tine sand, single stain, loose, noneffervescent, bradual boundari.	sinale SP Idelia
49- 18ú+C (-19- 72)	vellowish brown (10VR5/4) fine sand with ver. small amount of silt, single grain, loose, noneffervescent, refusal,	

Master core number: 512

Location: SE.SE.NM.Sec.4.115N.K13M. Scott Co., at the base of Bath Terrace scare evitt. due wast of bis cottonwood tree mentioned in MLC-33
Landscape position: west edge of Bug Island channel
Surface archeology: note
SCS mapped sulf: Ambraw clai loam
Elevation: 133.8m. (439/ft.)
Cored by: David S. Leish, 10-18-83
Described by: Eduin R. Halle, 7-31-64

Depth cm Soil Horizon (in.) or John	zon Description Classification	d Soil cation
0- 23 A11 (0- 9)	ver, dark grasssh brown (10983/2) loam, fine sand, weak fine subangular blocky, frighle, noneffervescent, abruet boundar.	SP
25- 31 A12 (9-12)	very dark eralish brown (10VR3/2) loams fine sands single arain, locket noneffervescent, abrupt boundary.	a,
31- 100 C (-12- 39)	gravish brown (10YR5/2) fine sand with some silt, single grain, lovee, noneffervescent, very abrupt boundar.	9. 9.
100 122 IIB2159 (-3948)	very dark gravish brown (2.5%3/2) fine sandy loam, weak medium subangular blocky, firm, noneffervescent, clear boundary.	? T
122- 16c HB22be (48- 65)	olive gra. (SV4/2) cla. loam. weak coarse subangular blocky. firm. noneffervescent. common thin black (SV2.5/1) cla. coats on ped faces. clear boundary.	נ
166- 180 IIB3b (-65- 71)	dert gravish brown (2,574/2) medium sorted sandy loam, weat coarse subangular blocky, friable, noneffervescency few very fine pebbles, clear boundary.	a. Vi
180- 194+111Cb (71- 76)	light brownish grav (2.576/2) tine sand, massive, noneffervacent, refusal,	a.

Described by Edwin R. Halle, 7-30-84 Leeth cm Sull Horizon (in.) or Lone Deach (100KE/1) silt loam, moderate fine granu (i. 17 A) Fishle, noneffervescent, heavil, bioturbated, (i. 17 A) Fishle, noneffervescent, heavil, bioturbated, (i. 17 A) Subangular blocks, friable, noneffervescent, moderatel, bioturbated, clear boundar, A3- A1 A1 Very dark granish brown (100KE/2) silt loam, wanting to fine subangular blocks, (i. 18 A2 A6) Fishle, noneffervescent, clear boundar, A1- A6) Fit dark sellowish brown (100KE/4) silt loam, moderate medium and coarse subangular blocks, friable, noneffervescent, man, moderatel, this boundard. 118- 142 B3t timely mottled dark vellowish brown (100KE/4)	() () () () () () () () () ()	Unified Soil assification lar, ML AL AL and ML	277 - 503 MBH (109-119) 303- 364 MBU (119-143) 564- 373 UU (143-147) 573- 402 UU (147-158) 402- 452 MBU (158-178)	brown (2.576.4) silt, with min, time olive, relieu (2.574/6) mottles, weal subangular thost, were slightly effervescent, few thin ver, dark troun (100/R2/2) clay coats in pores, about thousand (100/R2/2) clay coats in pores, about thousand (100/R2/2) clay coats in pores, about thousand (100/R2/2) silt, clay coats in pores, about the dark thousand dark brown (2.574/2) silt, clay, clay mottles, weak subangular block, ver, slightly effervescent, common thin to moderately thick very dark brown (100/R2/2) clay coats in pores, clear boundary. Braish brown (2.595/2) heav, silt loam, with many fine vellowsh brown (100/R5/6) mottles, massive, slightly effervescent, clear boundary. Olive eray (575/2) silt, clay, massive, very slightly effervescent, few reddish brown mottles as below in lower part, clear boundary. brown to dark brown (7.59/R4/4) silty clay, with effervescent, top 5cm, fine sand, loam as last 5cm, fine sand very fine mebbles at base, clear boundary. stratified erayish brown (2.59/5/2) silt and very fine sand silt, and vellowish brown (100/R5/4) and olive brown (2.59/4) fine and modium sand with some silt beds moderately laminated, strong, to slightly effervescent, variable, abrown sand with some	<u>.</u>
light reliowish brown (2.5%4/4) filt coarse subangular blocky, filable, no then thin ver, dark brown (10%6/2) of exter and in potes, gradual bronders.	AB 33	-	452- 690 0U (178-272)	vellowish brown (10YR5/4) medium sand with some silt, n. violently effervescent, one charcoal Piece at Soucm., indeterminant boundar	ώ ώ
light vellowish brown (2) fine dark vellowish brown subangular blocks, with friable, nonefferveschit brown (10952/2) clay coaboundary.	light vellowish brown (2.5%6/4) silt, with many fine dark vellowish brown (10%4/4) mottles, weak subangular blocks, with weak lamina etoward bases frights noneffervescent, few thin very dark brown (10%62/2) clay coats in Pores, abrupt boundary.	Ä.	690- 720+DU (272-283)	light olive brown (2.585/4) medium and coarse sand with few very fine pebbles, violently effervescent, refusal,	u. o
light olive brown (2.595) light vellowish brown (2 laminated, with few fine fe mottles very slightly very dark brown (109K2/2 abruet boundary.	Habit olive brown (2,595/4) silty class loam and liant vellowish brown (2,596/4) silt, moderately laminated, with few fine dark vellowish brown (109K3/4) Fe mottles vers slightly effervescents common thin vers dark brown (109K2/2) class coats in Pores.	ML 3/4)			
ish brown (2.5), fine brown to west subangular in to moderate!	dart gravish brown (2.574/2) filts clay loams units man fine brown to dart brown (10/K4/2) muthes, weak subangular blocks, noneffervescents common thin to moderatels thick versidant brown	U			

다. 설명 표 **설명**

Master core number Location: SE:SE:SM on the west side sits afor a high	Master core number: 514 Location: SE.SE.SE.SW.Sec.25.TI6N.KI3W. Morean Co., directl, beneath power lines on the west side or Mu., 100, across the road from a bie white house that sits ator a high sand, terrace remient	er lines that	522- 557 DL (206-219)	very dark araxish brown (2.5YS/1) to black (10YK2/1) at base clay to clay loan to loan, orasing rossibly biotorbated by orasinshs, nonethervescenty very abrunt boundary.
Lendscape Positions medial alluvial Surface afchecloss from Formal Surface at the position of	Landacare rosutuons medual allucial tan Subreace andrectors none Subreace andrectors introduced in the subreach		557- 566 DL (219-223)	derk eravish brown (10VR4/2) fine sand. Noneffervescent: ver: abrupt boundarr.
Elevation: 140.08. (4004).) Cored by: Devid S. Leish, 10-24-83 Lescribed by: Edwin R. Hallo, 8-6-84	(40041.) Leist, 10-24-83 r K. Hallo, 6-6-94		566- 619 UIJ (223-244)	dark sreenish sraw (50Y4/1) coarse silt to silt, strongly laminated, slishtly to strongly effervescent, common organic laminae, very abrupt
Deeth on Soil Horizon	fescraption	Unified Soil Classification	619- 620+UU (244-244)	derk grav (SY4/1) fine sand, strone), effervescent, refusal,
0-118 OL (-0-4e)	solum, heav, silt loam to silt loam, clear boundars.	턴		
116~ 13% C (46~ 55)	light clive brown (2.595/4) silt logm, with man, fine .ellowish brown (10VMS/6) mottles, weak medium subangular block, friable, noneffervescent, tew thin ver, dark gra, (10VMS/1) cla, coats in Pores, clear boundar.	료		
139 202 Bb1t (-55 80)	ulive brown (2.5%4/4) silt luam, with common fine light olive brown (2.5%5/6) and with common modium olive brown (2.5%4/3) mottles, well medium subangular blocks, friable, noneffervescent, man, thin dark grasse brown (2.5%4/2) cla, coats in pores, abruet boundars.	훅		
202- 222 4161 (-8087)	<pre>ver. dark brown (lovfs/2) salt loam, weat fine subangular block is frable; noneffervescent; clear boundars.</pre>	Ħ Ħ		
222- 240 Bb2 (-87-118)	dark gravish brown (2,594/2) to gravish brown (2,595/2) at base silt loam, with man, tine light olive brown (2,595/4) mottles, weal coarse subangular blocks, friable, noneffervescent, few thin very dark gravish brown (2,593/2) clast coats in pores, gradual boundars.	£		
299- 436 C(MBL) (118-172)	pravish brown (2.5%5/2) silt, weal to moderate tine and medium vellouish brown (10%5/6) Fe mottles, massive to weally laminated, strongly to slightly effervescent at base, pradual boundary.	뒫		
436- 462 UU (172-162)	olive grav (5Y5/2) and olive grav (5Y4/2) clav, with few fine darf vellowish brown (10Y64/6) fe mottles, moderately to strongl. laminated slightly effervencent, abrupt boundar.	ฮ		
462-480 UU (182-189)	olave gra, (SYS/2) salt, strongly languated and than beds, slaghtly effervescent, abrupt boundary.	Ξ Ξ		
460- 495 Dt. (189-195)	light olive brown (1.575/4) medium sand, nonefrervescent, abrupt boundar	a. V		
495~ 5±2 (M) (195~204)	clave grac (SYS/2) clav and salt, clav, wealth lamanated, shaptly effervencent, clear boundary.	Ü		

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Master Core rusibers				
Locations Navina OE. Sec. 120. 11consticted about 1251as west of Hus. 1co. Landscare rostitions medial allocal Surface archeology. 1 none SCS marred souls Worther silt loan Elevations 137 34m. (46741.) Cored bis David S. Leigh. 10-24-63 Described bis Eduin K. Halic. 6-1-63	Mi Thairein Love on horth sade of tarid	D 00 00 00 00 00 00 00 00 00 00 00 00 00	Masver core number: 516. Location: NE.NE.NW.Sec.4.TISN.RIBM. Sectt Landscher Position: Bath terrace SC mapped soil: Sparta loans sand Elevation: 185.5n. (444ft.) Cored by: USL.MC	
[lepth cm Soil Horizon (in.) or Zone	Unit Description Classi	Depth on 1	Description	Unified Soil
0-120 0t. (-0-47)	solum. salt loam, abrumt boundar.	ML 0- 22 A1 (-0- 9)	very dark era. (10YR3/1) loams fine sands vers weak coarse granulers very friables nonetfervescents chair boundars.	à r
170 - 141 III 470 - 60 - 74 - 7	Ver . dari scalat Dicum (101757.) silt loam, meat- fine schangular block., friable, noreffer . ept. Clear boundary.	7L 22-127 C1 (9-50)	very dark graphsh brown (109KS/2) loam, fine and medium sand, single grain, loose, nonethervescent, obser houndary	\$
141- 156 Bb (56- 62)	olive brown (1.5Y4/4) silt loam, with man, fine dark brown (10YE3/3) mottles, weak modium subaneular blocks, friables noneffervescent, pradoul boundars.	ML 127- 150+02 (50- 59)	darf vellowski brown (10VKS/4) loam, fine and medium sand, single grain, loose, noneffervescent, refusal,	il iii iii
158 - 372 Cb (MDD) (-62-146)	light clive brown (2.575/4) light silt logn, with man, fine light clive brown (2.575/4) and dark relicuish brown (10764/4) mottles, weak subangular block, friable, slightly effervescent, gradual boundar.	뒾		
572~ 870 mbu (146~343)	light olive brown (2.575/4) and grainsh brown (2.575/3) light silt loam and silt, man, fine dark cellowish brown (10763/4) and vellowish brown (10763/4) and vellowish brown (10765/5) mottles, thinl, bedded at top to moderate and strong laminae beginning about 420mm, slightly to strongly effervescent, first zone with araish brown (2.575/2) laminae at 591-593cm, this color laminae increasing with depth, few slightly heavier strata beginning about 690cm, ver, abroupt boundary.	ÄF		
870- 973 DU (343-363)	very strongly laminated gravish brown (2.5V5/2) coarse salt and light vellowish brown (2.5V6/4) silt, with few fine and medium darl vellowish brown (10VR3/6) fe mottles, strongly effected from clower (10VR3/6) fe mottles, strongly common clive brown (2.5V4/4) and clive (5V4/4) clay laminae, very abrount broundsry.	뉟		
973-1015 UU (383-406)	dark ereenish sta. (5644/1) coarse silt and dark era. (544/1) silt, stratified with few strong laminae, slightly to strongl, effervescent, very few places of fine uncarbonized creanic matter, very abrupt boundary.	I		
1015-1016+UL (400-400)	clive (5Y4/3) fine sand. loam, noneffervescent, refusal,	ď.		

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PILC - 40

HHJ : 'Q PART DE AL	Location: NEINE: NMI Dec. 4: FigN. RISM. Scott Landersere existion: Fue Island channel SCI marred coll: Wal-land silt loam Elevation: 15:19m (45/rt).) Cored by: DELOE Treation: ENH		Constitution of the Consti	Naster core number: 518 Location: NESE:NWisec.4.1150.KN3W Scott County Landscape position: Bus Island Channel SCS mapped soil: Wateland silt loan Elevation: 132.9m (43cft.) Cored by: DSLOEC Described by: ERH	
Deeth on Soal Herizon (10.) or tone	Description	Unified Soil Classification	Depth on Soal Horizon	Describtion	Unified Soi Classification
0-192 (sp. (0 76)	spoil, abrupt koundar:	ತ	0-73 E (-0-29)	smool), clear boundar.	된
192-313 SOLUMB b14 1.76-1233	black (10VR2/1) to black (2.5V2/0) meaty silt; cla. loam to cla.; clear boundars.	, (1	73- 215 SOLUMB (29- 85)	black (10VK2/1) to dark srav (5V4/1) Peatr silts clay loam to clay loam, clear boundars.	eatr silts CL
015-324 C1(UU) dat (123-128) ett	dark ere. (Sy4/1) silt. cle. loem. messive. stronel: eftervescent, few sestrosod fraements. ver. ebruet bounder:	נר	215- 360 C(UU) (-85-142)	clave graving VS/C) salt loam to salt, claviosm, massave to meak coerse subangular blocky framble, vaolentis effervescent, man, whole and framented	Char loam. ML or frieble. fraemented
324- 330+IIC2(UU) - 6)5 (128-130) - 61	olive are: (GYS/2) medium and fine sand, slightly effervescent, refusal,	d.	360- 780+00 (142-307)	mastropod shells, indeterminate boundary, dark mreenish mray (50/4/1) metbly coarso saud, violently effervescent, refusal,	Y. Se saud, SW

Natter core number: 520 Location: NWISEISMISEC. ZolliönsKiSW. Morean Count. Landscare Position: distal alluvial fan 905 marred soil: Durc silt loam. Elevation: 1351, 36 (444ft.) Cored bi: ESL, JEC Described bi: EKH

Master core number: 519
Location: 5E.5M.SM.Sec.26.TIGN.RI3M. Morean Co., on H. Yeck's propert, 174mi. From lever on field road at the edge of Bluffs Terrace scare Landscape position: Bluffs Terrace Surface archeology: none 5C. mapped soil: Hoperston sand, loam Elevation: 134.7m. (442rt.)
Cored by: David 5. Leiph, 10-25-83
Described by: Edwin R. Hallo, 9-1-84

PILC-48

0-152 0L solum: loam; clear bounder; (0-5) (0-60) 152-230*C dark vellowsh brown (10YR3/4) fine sand; (0-75) 154-326 SOLUMb dark stratisted rew light olive brown (2.554/4) and dark vellowsh brown (2.555/2) silt loam to salt vellowsh brown (2.555/2) silt loam to vellowsh brown (2.55	Death ca Soil Horizon	ir 12 ori	West retain	Unified Soil	Depth on Soal Horizon (10.) or Zone)	Unified Soil	- 5 !
Jarl vellowish brown (10VR3/4) fine sand. Stratified, rew lisht brown (2.5%4/2) silt lean, with man, stratified, rew lisht olive brown (2.5%4/4) and dark vellowish to lean thick laminae, noneffervescent, refusal. S20-399 C(ML)	0- 152 OL (solum, loam, cle	ar boundar.	뒾	0- 191 C (0- 75)	spoil, clear boundary	Æ	
C(MDL) wravish brown (2.595/2) silt loam to silt, with man, fine olive brown (2.594/4) and man, fine, faint brown (7.5965/2) mottles, noneffervescent, washly to finely laminated with few sand. Roam and few ver, dark gra, (592/1) laminae, gradual boundary. -D/UU sravish brown (2.595/2) to ver, dark gra, (593/1) m-dium vand, stratified with 2.5952/2 silt and silt loam laminae and thin beds: 593/1 silt and fine sand, silt loam, creamed from 590-600, 593/1 fine and medium sand and silt; stratified from 640-680, strongly effervescent, refusal.	152- 230+0 (-6091)	dark vellowish b stratified: tew to loam thick la	rown (10YR3/4) fine sand. Tieht olive brown (2.5%5/4) s mines, noneffervescent, refus		191-320 SOLUMB (75-126)	dark grailsh brown (2.584/2) silt loam. fine ollve brown (2.584/4) and dark vell brown (10984/6) mottles, gradual boundar		
+D/UU stailsh brown (2.5%5/2) to very dark stail and silt headlow sand, stratified with 2.5%5/2 silt and silt loam laminae and thin beds: 5%5/1 silt and fine sand, silt loam, creanic from 5%0-600, 5%3/1 fine and medium sand and silt, stratified from 640-680, strongl, effervescent, refusal.					320-399 C(MDL) (126-157)	practsh brown (2.5%5/2) silt loam to sil man, fine olive brown (2.5%4/4) and man- faint brown (7.5%6/2) mottles, noneffer weally to finely laminated with few sand and few ver, dark era, (5%2/1) laminae, boundary.	•	
					399- &80+D/UU (157-268)	eralish brown (2.5%5/2) to verl darf era m-drum cand, stratified with 2.5%5/2 sil- loam laminae and thin beds: 5%3/1 silt a sand, silt loam, creamic from 5%1-600. S and medium sand and siltistratified from stronal, effervescent, retusal.		

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Master core numbers 50.1 Location Morean Counti-Location: NW.NE.SW.Swc.Zer.How.KisW. Morean Counti-Landscare Position: medial alluvial fan 505 masted Soult Euro sult loam Elevation: 155.5m. (444ft.) Cored hi: FSL in G.

Derth on Soal Horazon	Description	Unified Scil	Depth on Soil Herizon (10.) of Jone	1200
0	spoil, clear boundary	뒾	0- 163 SOLIM (-0- 64)	salte
33- 162 SOLUMB1 (13- 64)	silt loam, abrumt boundary	로	163- 526 110(EL) (-64-207)	dark estr
162- 273 SOLUMB2 (64-107)	salt leam, gradual beundar.	뢒	526- 720+EU	indete dark g
273-361 C(MDL) (107-142)	erailsh brown (2.5%5/2) silt loam to silt, with man, tine dark vellowish brown (lox63/c) and dark vellowish brown (lox64c) mottles, weak coarse subangular block, to weak), laminated, noneffervescent, abrupt boundary,	n arts	(207-283)	ੱ 3 ਹਵਾ ਹਵਾ ਹਵਾ ਹਵਾ
361- 457 MUL (142-186)	olive scal (5V5/2) and scalish brown (2.5V5/2) silt clai loam and silt, stratified with strongli laminated zones, with zones of man, tine dark is lowish trown (10VR5/6) and dark rellowish brown (10VR4/6) mottles, noneffervescent, abrupt boundarie.	H		
457- 525 UB (186-207)	ver, dark gra, (5Y3/1) and dark gra, (5Y4/1) silt and silt loam, stratified with strongly laminated zones, slightly effervescent, common to abundant disseminated fine rieces of organic matter, very abrupt boundar.	<u> </u>		
525- 660+En (207-260)	dark granish brown (2.574/2) loam, medium to coalse sand, pebbly at base, few loam, laminae at top. strongl, effervescent, refusal.	& t SP		

TLC-5-1

Master core number: 522 Location: MM.SW.NW.Scc.35.TIGN.KISW. Morean Count. Land care Position: Eus Island Channel 9(5) marked soil: Ambrew cla. loam Elevation: 133,55m.436ft.) Corec Li Dil. 3EC Described b: EKH

tine, or tone	unn.) or fone Description Classification	Classification
0- 163 SOLIM (-0- 64)	salts class loam to loams abrunt boundars	로
163- 526 11C(EL) (-64-207)	dark measish brown (2.5Y4/2) fine and medium sand with few loams sand beds, noneffervescent, indeterminate boundars.	e a a a a a a a a a a a a a a a a a a a
526- 720+pu (207-283)	dark brasish brown (2.574/2) medium and coarse sand with few pebbles, noneffervescent, refusal.	35 3.

Master cord number: 500 Locations New SwinNew Sec. 35, Tidow R. Landscape Position: Fluefs terra- 500 marked scill Orio sands loam Elevation: 134,1 (440ft.) Cored by: DSLy JEG Described by: ERH	Master corvinanter: 523 Location: NWISWINW.Sec.35.T16N.R13W. Morean Countribudescape rosstron: Fluefe terrace (edse) 525 mareed scale Orio sands loam Elecation: 134.1 (440ft.) Cured by: DSL. DEC		Paster cure number: 524 Location: NE.SHANM.Sec.4.11 Landscape Position: Bath te SCS mapped soll: Sparta los Elevation: 139.7m (442ft.) Cored b.: ESL. JEC Describéd b.: ERH	Nester cure number: 524 Location: NE.SW.NW.Sec.4.715M-KI3W. Scott Count. Landscape Position: Bath terrace (edge) SCS marked soil: Sparta loam. sand Elevation: 139.7m. (442+t.) Cored b.: DSL. JEC	
Depth on Soal Horazon (an,) or Sone	Unitied Soil Description Classification	Unified Soil Classification	freeth on Soil Horizon (in.) or Zone	Duepth on Soil Horizon (in.) or Zone Description	Unified Sco
0- 145 SOLUM (-0-57)	silt loam to loam to sand, loam, clear boundary	oundary ML	0- 45 SOLUM (0- 16)	ver: dark brown (10YR2/2) fine and medium sand, clear boundary.	medium sand, SP
145-208+114(6U) (57-82)	dark brown (10VK3/3) to dark vellowish brown (10VK3/4) Fine and medium sand, noneffervescent, refusal,	rown Vescent.	45- 155+C(OL) (18- 61)	ver, dark gravish brown (10YR3/2) fine and medium sand, refusal,	The and medium GP

18-27H

M.C. 51

MLC-53 Master Core number: 525 Locathori NW-5W-NW-5FC-135/T16N-K134 Landscare Post thori sand done 50 mapped soil: Sparte loams sand Elevation: 134.7m (442ft.) Cored bit 150. JEC Described by EKH	MLC-55 Master Core number: 525 Location NWISH-NWISH-13-T16N-R13W, Morean Count, Landscape postition: send dure 500 masterd soil: Searte loam; send Elocation: 134.7m (442tt.) Governor: 124.7m (442tt.)		Master core number: 526 Locations NE:NE:NU.Sec.15,1164,K134 Corner of the fenced in area of Landscape position: Bath Terrace Surface archeologis none Surface archeologis none Sic mapped soil: Plainfield sand Elympation: 136.9m, (449ft.) Cored bis David S. Leigh: 10-26-85 Described bis Eduin R. Haulc, 8-4-6	134. f the 63 63	Morgan Co., 3rt, west of the southwest water treatment Plant	ie southwest
Empth om Soil Horizon (16.) of Zone	Description	Unified Soil Classification	Deeth on Soal Horazon (186.) or Zone	Description		Unified Soil Classification
0- 69 SÖLUM 1 0- 35)	ush brown (J.	0- 180+0L (- 0- 71)	brown (10985/3) and dark rellowish brown (10984/4) time sand, noneffervescent, common dark vallowish brown (10983/6) iron stained bands.	lowish brown Vescent, common or stained bands	G.F.
69~ 116 ¢ (35~ 46)	brown (10VK5/3) time and medium sand, sinale grain, loose, noneffervescent, very abrupt bounder	<u>a</u> 1))		יהלנים].		
116- 240 Solumb (46- 94)	losmo clesar boundaro	Ŧ				
140-360-110(DL) (-94-142)	graish brown (2.5%%) silt, clai loam and silt, clai, with man, fine dark vellowish brown (109%4/c) mottles, weally laminated ? noneffervescent, gradual boundar	1)t, CL				
360 410 ft (14≧~161)	brown to dark brown (109K4/3) loam to light olive brown (2.595/4) fine sand, loam to fine sand, nonetfervescent, clear boundari.	ù. Vi				
410- 486+DU (141-189)	dark smallsh brown (2.584/2) and smallsh brown (2.585/2) fine and medium sand and loamy sand, stratified, strong), effervescent, refusal,	<u>م</u> ش				

			MLC-50		
PASSET COTE NUMBERS 5.9 Passer core number: 5.9 Location: NWANE SUBSECTATION RISAL Landscape Position: distal alluvial Surface archeolog: none 5(5) mapped soil: Worther sit loam 5(5) mapped soil: Worther sit loam 6(447): Cored by: David 5. Leigh: 10-27-83 Described by: Eduin Ry Hailor: 7-31-8	Master core number: 5.9 Naster core number: 5.9 Location: May NE Secretary 115N/R134. Scott Loc Location: May NE Secretary 115N/R134. Scott Loc Landscaper position: distal alluvial fan Sur face archeolog: none Sús mastered action: allt loam Sús mastered soil: Mortier allt loam Sofs mastered soil: Mortier allt loam Sofs mastered soil: Mortier 100-27-88 Described bot Edwin R. Mairo: 7-31-84		Master core number: 528 Location: NWINNISE.Sec. 5.115A.K13W. Soft.east of 40 acre section boun Landscare position: medial alluvial Surface archeolog: none SCS mapred soil: Worther silt loam Elevation: 157.1m. (450ft.) Cored by: David 9. Leigh, 10-27-83 Described by: Eduin A. Hailo. 7-31-	Master core number: 528 Location: NWANNASE.Sec.3.TISN.KI3W. Scott Co., 400ft, north of field Soft.east or 40 acre section boundar. Landscare prosition: medial allovial fan Landscare prosition: medial allovial fan Softmared schi: worther silt loam Elevation: 15/1m. (450ft.) Cored by: David S. Leish, 10-27-83 Described by: Eduin f. Haulo, 7-31-84	© : :
Depth on Soal Herizon	Description	Unitied Soil Classification	Death on Soal Herazen (an.) or Zone	Description	Unified Soil Classification
6- 100 GL (6- 39)	solum, salt loam, clear boundar.	٦ ا	6- 191 GL (- 0- 75)	solum, salt loam, abrupt boundar.	뒫
100-158 C (39-62)	troum to dark brown (109K4/3) silt loam, weak subansolar bloch, nonefferovscent, few thin light anax (109K7/2) silt coatson ped faces, abropt boundars.	로	191- 224 Alb (75- 63)	dark brown (109KS/3) silt loan, with common tine vellowish brown (109KS/4) mottles, west fine subansular blocks, noneffervescent, clear boundars.	년
158- 187 IIBIb (62- 74)	verr dark brown (10VR2/2) silty clas loams moderate medium subangular blocks, friables noneffervescent, clear boundars.		224- 260 Bb (-83-102)	olive brown (2.574/4) silt loam, with man, fine dark vellowish brown (10764/4) mottles, west medium subangular block,, noneffervescent, gradual boundary.	<u>ಕ</u>
187 - 266 11B2b (-74 - 81)	ver, dark brown (10982/2) heav, loam, weak medium subansular blocki, firm, noneffervescenti Clear boundari.		250-301 CB(MDU) (162-119)	light olive brown (2.575/4) silt, with man, fine olive brown (2.574/4) and few fin mottles, mottles massive, very slightly effervescent, one zone of	Ĭ.
208236-11836 (-8194)	very dark brainsh brown (109KS/2) heavi loam, weak medium subanbular blocks, firm, noneffervescent, clear boundari.	뒫	301- 389 MMJ	moderately laminated silts, ver, abrupt boundari, gravish brown (2.575/2) and light (2.574/4) and light olve brown (2.575/4) silt.	. u
238-397 110bs (-94-186)	clave (5Y5/4) claidoan to fare sand, loan at base, with many fire clave eray (5/4/2) and with few fire dark velocity brown (10/K4/5) Fe mottle was coarse subanallar block, to massive.	ا. انده،		common, fine, dark vellowish brown (10984/2) Fe mottles, strongly laminated strongl, effervescent, very abrupt bounders.	
397- 420 UL (156-165)	mean Comparation and the control of matrice increases control of the said sold and sold, with common fine faint brown (7.5VR5/4) mottles, very wealth leminated noneffervescent, clear boundar.		389- 508 UU (153-200)	eraxish brown (2.595/2) to olive (595/3) coarse silt, with few fine dark vellowish brown (1998/4/c) motthes, stratished strongly effervescent, one zone in the upper half with strong laminae and several organic laminae, units are massive, but have few fine pores, some with a motor of the pores.	? 구
420- 203 M (165-198)	clive arak (SVS/2) and brown (7.5VS/5/4) fine saids sails and clive brown (2.5VA/2) fine and saids moderately to afronals laminated, with common fine dart vellowish brown (10VR4/6) fe mottless noneffervescent, few saids viess versible out boundary.	Ę .	505- 529 Muu (200-268)	11t. with many fine outlies very fairle. Outlies very fairle illes massive elisphis	륲
502 - 530+bt (196-203)	granish brown (2.575/2) medium sand. noneffervescent, refusal.	ŭ.	529	clear boundary. Tight olive brown (2.5V5/4) medium and coarse sand at base, with thick olive era, (2.5V5/2) silt laminae down to 720cm., first 45cm, onl. ver, slightly to slightly, effervescent, silt laminae decreasing in frequenc, and thickness with depth, refusal.	ŭ. Vi

Maiter core number: 529 Location: NE.NE.5W.5ec. 4/15N.KI3W.25Uft, west of field boundar. Landscape position: Bull illand charsurface archeolous: note SCS mapped soil: Dupo silt loam Elevation: 132.9m. (4364t.) Cored by: David S. Leish: 10-27-ES Described by: Edwin K. Hailo: 7-31	. Scutt Co., 40ft. south of Pecan trine!	Master coree and Location:	Master core number: 530 Location: NW.NW.SE.Sec.3.715N.RI3W. entrance Landscape position: apex alluvial f Surface archeology: none SCS mapped soil: Worther silt loam Elevation: 146.5m. (480ft.) Cored by: David S. Leigh. 10-28-83 Described by: Eduin R. Hadic. 8-1-8	Master core number: 530 Location: NW.NW.SE.Sec.3.TISN.RI3W. Scott Co., 20ft. into field at entrance in NW.NW.SE.Sec.3.TISN.RI3W. Scott Co., 20ft. into field at entrance position: apex alluvial fan Surface archeology none silt loam. SCS mapred soil: Worther silt loam. Elevation: 146.3m. (430ft.) Cored by: David S. Leish. 10-28-83 Described by: Eduin R. Hajic, 8-1-84	# # # # # # # # # # # # # # # # # # #	Ti di
Deeth cm Soal Horizon (in.) or Zone	Uniti Description Classif	ed Soil Depth cr acation (an.)	Derth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification	ed Soil ication
0- 73 C (0- 29)	thin), bedded dark aray (10VR4/1) to lisht reddish brown (2,5VR6/4) silt loam, noneffervescent, spoil, ver, abrupt boundary.	ML 0-244 (-0-96)	5	solum, silt with cherty gravels, clear bou	boundany	로 로
73 98 1186 (29 39)	very dark gravish brown (2.5VS/2) silty clas loam, moderate medium subangular blocks, firm, strongl, effervescent, two Fe coats lining ped faces, abrupt boundary.	244- 36.2 (96-143)	MDL	light olive brown (2.5V5.4) and light rellowish brown (2.5V6.4) silt and ver fine sandr silt, massive to weak), stratified at base, with common fine olive brown (2.5V4.4) mottles, noneffervescent, abrupt bounders.	rellowish dosilt, with common	£
94128-00 (3850)	thinly bedded very dark brown (10VR2/2) Featy heavy silt loam, and black (10VR2/1) Feat, violently effervescent, common mastropods and bivalve framments, abrupt boundary.	OL 362-535 MDU (143-211)	при	scavish brown (2.5%5/2) and light vellowish brown (2.5%6/4), and light olive brown (2.5%5/4) silt and very fine sand, with many fine dark vellowish brown (10%64/4) and dark vellowish brown	h brown silt Nowish tratified	럳
126- 142 OU (50- 56)	blac! (10VR2/1) peat, slightly efforvescent, very few mastropods and bivalve framments, clear boundary.	פר	- no vi no ⊃	at base, slightly to strongly effervescent, fine sand laminae in lower 40cm, increasing in abundance to last 20cm, which is all olive brown (2.574.4) sand, very abrupt boundary.	, fine brown	
142- 152 0U (56- 60)	very dusky red (2.5VR2.5/2) peaty heavy silt loam, massive, violently effervescent, abundant pastropod and bivalve frasments, clear boundary.	OL 535- 600 (211-315)	2	gravish brown (2.595/2) and light brownish gravish(2.596/2), and light vellowish brown (2.596/4) silt and very fine sandy silt, moderately to	ora. 6/a) to	뒫
152- 171 UU (60- 67)	very dark stay (5V3/1) heavy silt loam, massive, violent), effervescent, abundant sastropod and bivalve transments, whole, abrupt boundar.	ИL		strongly laminated, strongly effervascent, very abrupt boundery.		:
171- 270 UU (67-106)	olive grav (574/2) medium and fine sand with rare very fine mebbles, mush, violently effervescent, abundant mastropod and bivalve framents, whole, abundant boundary.	800-1160 SP (315-457)	2	pravish brown (2.5%5/3) and pravish brown (2.5%5/2) heav, silt, strongly laminated with some massive units, strongly effervescent, very abrupt boundary.	ith some abrupt	<u></u>
270- 346 UU (106-137)	thickly laminated and thinly bedded dark bray (5V4/1) silt, and light brownish bray (2.5V6/2) fine and very fine sand laminae, strongly effectorescent, silt laminae bet stronger in second half of unit, very abrupt boundar.	1160-1200 UU ML (457-472)		very dark gravish brown (2.5Y3/2) and gravish brown (2.5Y5/2) silt and very fine sand, very strongly laminated, violently effervescent, heav. Fe staining expecially at top of unit, ver, abrupt boundery.		륃
346- 500 UU (137-197)	light clive brown (2.5V5/4) to gravish brown (2.5V5/2) medium and fine sand, violently effervescent, indeterminant boundary.	1200–1226 SP (472–483)	OO.	dark gray (N4/O) silt and very time sandy very strongly laminated, strongly effervescent, common very dark gray (SY3/1) organic silt laminae, abrust boundary.	Common Common Es	E
500	olive brown (2.574/4) medium and coarse tair sorted sand with few very fine mebbles, some silt violently effervescent, refusal.	SP 1226-1230+UL (483-464)	+UL	srav (SYS/1) fine sand, noneffervescent, rcfusal	cfusal	ŭ. Vi

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MLC-60

Master core number: 5.1 Location: NE.NE.SE.Sec.4.715N.K13W. MLC-56. Landscape position: medial alluvial Surface archeology: none SCS mapped soil: Littleton silt loan Elevation: 136.2m. (447%). Cored by: David S. Leiph, 10-28-83 Described by: Eduin K. Halic, 7-31-8	Master core number: 5.1 Location: NE.NE.SE.Sec.4.715N.R13M. Scott Co., midway between MLC-55 MLC-56 Landscape position: medial alluvial fan Surface archeology: nong Surface archeology: nong Surface archeology: nong Elevation: 136.2m. (447t.) Cored by: David S. Leigh, 10-28-83 Described by: Edwin R. Hallo, 7-31-84	4.C-55 and	Master Core number: 532 Location: NE.NW.SE.Sec.4 remnant Landscape position: Bus Surface archeology: none SCS marked soil: Landes Elevation: 132.4m. (4347) Cored br: David S. Leish Described by: Edein K. H	Master core number: 532 Location: NE.NM.SE.Sec.4.TISN.RISM. Scott Co &Oft. west of sands terrace remnant Landscare position: Bug Island channel SUrface archeologs: none SCS mapped soil: Landss fine sands loam Elevation: 132.4m. (434ft.) Cored by: David S. Leigh, 10-51-83 Described by: Edwin R. Haulo, 7-31-84	# O
Depth om Soil Holizon (in.) or Zone	Son	Unified Soil Classification	Deeth om Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 120 OL (- 0- 47)	solum 1, salt loam, abrumt boundary	로	0- 21 C (0- 8)	ver, dark graush brown (10VR3/2) heav, silt loam, weak fine amoular blocks, noneffervescent, ver, abrust boundard.	oneno ML
120-261 OL (47-103)	solum 2, heavy silt loam, clear boundary	ΔĽ	21- 165 OL 6- 443	black (10VR2/1) and very dark gray (10VR3/1), and overy dark gray (10VR3/1), and	90 CP
261- 289 C(MDU) (103-114)	finely mottled clive brown (2.584/4) and light clive ML brown (2.585/6) silt loam, massive, friable, slightly effervescent, abrupt boundary.	sht olive ML shaptir		loam. Fine sand, fine and medium sand, west subaneous blocky, to single grain, loose, noneffervescent, darker units are organic, vor, abrupt boundary.	
289- 300 MfL (114-118)	dark statish brown (2.574/3) heavy silt loam, with common fine olive brown (2.574/4) mottles noneffervescent, abrupt boundary.	الـ م	163- 308 MDL (64-121)	thin) redded and laminated fine sand, clar loam, loam, loam, fine sand, silt, granish brown (2.595/2), very dark granish brown (2.593/2), tlack	an, ML ∈laci.
300- 310 MIU (115-122)	light vellowish brown (2.576/4) silt, with common fine light olive brown (2.575/4) mottles, massive to ver, weally laminated slightly effervescent, abrupt boundars.	ommon ML 1551ve 5nt.		(2.592/1) vellowish brown,, noneffervescent to very slightly effervescent at base, top Soom, has few organic sand laminae, overall unit fring upward, common medium dark vellowish brown (109KBA/L) and (109KBA/L) Fe mottles, very about	,
310- 329 MDL (122-130)	dark praxish brown (2.574/3) heav, silt loam, with man, fine vellouish brown (10785/5) mottle: weak subangular block), noneffervescent, abrupt boundary.	n, ML tles, upt	308- 350 DU (121-138)	boundary. Olive brown (2.5Y4/4) meduium sand, with few gravish brown (2.5Y5/2) silt laminations,	ď.
329- 356 UL (130-140)	olive gra. (575/2) clar loam, with few medium dark vellowish brown (107R4/6) mottles, weak subangular blocky, noneffervescent, very abrupt boundar	upt CL		strongly to violently effectors. Lefusal boundary.	
356~ 530 JUJ (140~209)	weelly laminated to strongly laminated olive grad (SYS/2), gradish brown (2.5YS/2) and dark brown (7.5YS/2), gradish brown (7.5YS/4) coarse silthelity loam, claim slightly to strongly effervescenty few large dark vellowish brown (10YR4/6) Fe mottles, few krotoving, abrupt boundary.	cun cun cun : feu : les,			
530- 570+D/UU (209-224)	stratified light olive brown (2.575/4) medium and fine sand and olive gra. (575/2) moderatel. laminated silt, strongly effervescent, refusal.	im and SP al.			

MLC-61			MLC-62		
Master Core number: 503 Location: NE.NW.SW.SSC.16.Tich.KIZW. field in pract. field entra Landscape rosition: medial alluvial f Surrace archeology: none SCS marred soil: Coffeer silt loan Elevation: 135.5m. (444ft.) Cored by: David S. Leigh and Julia E. Described by: Eduin R. Hairo, 8-2-84	Master core number: 523 Location: NE.NN.SM.S.c.16.TicN.KIZW. Morean Co 3ft. north of Flowed Land-care position: medial allovial fan Suriace archeology: none SCS mapped soil: Coffeen silt loan Elevation: 135.5m. (444ft.) Cored by: David S. Leiph and Julia E. Clifton, 11-21-83 Described by: Eduin R. Hallo, 8-2-84	e road	Master core number: 534 Location: NW-NW-SE.Seci6.TieN.RIZW, resolution of Arenzvill Rd. Landscape position: medial alluvial to Surface archeology, none 505 mapped soil: Duro silt loan Elevation: 135.cm. (445ft.) Cored by: David S. Leigh and Julia E. Described by: Edwin R. Hailo. 8-2-64	e number: 534 NW.NW.SE.Sect8.Ti6N.Ri2W. Morgan (o., on field enterance 25ft south of Arenzvill Rd. position; medial alluvial tan feolit Duro silt loam 135.cm. (445ft.) Lavid S. Leish and Julia E. Clifton, 11-22-53 Div Eduin R. Halle, 8-2-64 Div Eduin R. Halle, 8-2-64	į
Depth cm Soal Horazon (an.) or Zone	Describation	Unified Soil Classification	Depth on Soil Horizon	Description	Unified Soi
0- 86 €1 (0- 34)	ver, dark grav (10VR3/1) and black (10VR2/1) silt loam, stratified with units of biotubated laminations or moderated granular structure, triable, strong, to nonefervescent, contains at least one A horizon from 52-86cm, abrupt boundari.	륃	0- 156 C (0- 77)	brown to dark brown (10VR4/3) and dark vellowish brown (10VR4/4), and very dark branish brown (10VR3/2) and dark brown (10VR3/2) and dark brown (10VR2/2) silt loam and silt, stratified with rapidly alternating units being massive and moderately to strongly laminated, browned or brown or brown.	뉟
86- 127 Bilb (34- 50)	<pre>starish brown (10VR5/2) silt loam, weak medium subangular block, friable, noneffervescent, clear boundary.</pre>	된	196- 208 11A1B (77-82)	mean substituted brocks, fraction, strongly effervescent, very abrupt boundars. very dark gray (10YR3/1) light silts class foam, moderate fine substigut blocks, fractie.	ט
127- 141 B126 (50- 56)	dark statish brown (10VR4/2) heav, silt loam, moderate medium subansular blocks, firm, noneffervescent, many thin statish brown (10YR5/2) silt coats en med faces, stadual boundary.	뒾	208- 230 IIB1bs (82- 91)	noneffervescent, gradual boundar Very dark gray (LOYR3/1) silty class loam, moderate medium Prismatic, firm, noneffervescent, gradual boundary.	ರ
141- 230 1152bg (56-91) 230- 310 1163bg	very dark gray (10VR3/1) silty class loams moderate medium and coarse columnar, firm, noneffervescent, gradual boundary, dark grassish brown (2.5V4/2) loam and silty class	고 분	230- 293 IIB2bet (91-115)	derk eray (10VK4/1) sulty cla. loam, moderate coarse Prismatic, firm, noneffervescent, man, very dark eray (10VK3/1) cla. coats on red faces, one large knotovina of dark erayish brown (10VK4/2) loam, eradual boundar,	כר
(91-122)	loam, to heavy silt loam at base, with many fine olive brown (2.5%4/4) mottles, moderate medium subangular blocky, noneffervescent, common thin very dark grayish brown (2.5%3/2) clay coats on ped faces and in pores, clear boundary.	!	293- 322 11B3b9 (115-127)	very dark gravish brown (2.593/2) loam, with common fine olive brown (2.594/4) mottles, weak coarse subangular block, friable, noneffervescent, clear boundar,.	Ę
310- 339 111Cbg (122-133)	gravish brown (2.5V5/2) loam, with many fine and medium dark vellowish brown (10VR4/6) Fe mottles, massive, noneffervescent, one Krotovina at top of unit math dark gravish brown (10VR4/2) silty clary loam fill, ahrupt boundary.	뒾	322- 392 IIICbə(D/U (127-154)	322- 392 IIICbs(D/U very dark stayish brown (2.593/2) and dark (127-154) stayish brown (2.594/2), with few fine vellowish brown (10985/c) mottles, massive, nonettervescent, clear boundary.	φ Σ
339- 410 DL (133-161)	light clive brown (2.575/4) fine sand, noneffervescent, indeterminate boundary.	o. o.	392- 410 DL (154-161)	dark gravish brown (2.574/2) to gravish brown (2.575/2) fine and medium sand, stratified, noneffervescent, clear boundary.	SF.
			410- 600+0U (161-236)	gravish brown (10985/2) fine sand, ver, slightly effervescent, refusal.	85

Master core number: 535					
Locations Na. NE. SE. Sec. 15. T18N, R12W. Morean Co 30*t. east. southeast	Hor san	: ن	30ft.east.	southeast	
of the first telephone pole east of the field boundary on King's	east of	the	field bound	ary on Kins's	

턴

enavish brown (2.5V5/2) and enavish brown (2.5V5/2) enavish brown (2.5V5/3), silt, stratified, one zone near top of very dark enavish brown (2.5V3/2) silt with few fine uncarbonized organic matter elects, strongly effervescent, refusal.

608- 660+DU (239-260)

Landscape position; medial alluvial fan Surface archeologi none GCS mapped soil: Morthen silt loam Elevation: 140.2m (400ft.) Cored by: David S. Leish and Julia E. Clifton, 11-22-83 Described b.: Edwin R. Halic, 9-5-84

Unified Soil Denth cm Soil Horizon

(in.) or lone	Description Classification	ication
6- 47 A1 6- 19)	black (10YR2/1) silt loam, moderate fine subangular blocky, friable, noneffervescent, gradual boundary.	로
47- 99 E	very dark pravish brown (10VK3/2) silt foam, moderate fine subangular blocky, friable, noneffervescent, heavily bioturbated, clear boundary.	¥
132 C 52)	ver, dark sravish brown (2.5Y3/2) silt loam, weak medium and coarse subansular blocky, friable, noneffervescent, clear boundary.	ŧ
162 Ab1 64)	very dark brown (10YR2/2) silt loam, weak medium breaking to fine subangular blocky, friable, noneffervescent, gradual boundary.	로
180 Bb1 71)	dark brown (10VR3/3) silt loam, moderate medium subansular blocky, friable, noneffervescent, clear boundary.	로
160- 240 Ab2 (71- 94)	black (10VR2/1) heavy sult loam, weak fine subansular blocky, friable, strongly effervescent, clear to abruet boundary.	럹
240- 301 C(MDU) (94-119)	light olive brown (2.5%5/4) and gravish brown (2.5%5/2) silt, with many fine yellowish brown (10%85/6) and dark yellowish brown (10%84/6) mottles, weak coarse subangular blocky, strongly effervescent, few light yellowish brown (2.5%6/4) fine sand near base, abrupt boundery.	로
301-392 MDU (119-154)	pravish brown (2.5%5/2) silt, with man, fine light olive brown (2.5%5/6) and dark vellowish brown (10YR4/6) Fe mottles, strongly effervescent, stratified, weakly to moderately laminated, abrust boundary.	로
392- 432 UU (154-170)	olive grav (SVS/2) coarse silt to sandy coarse silt, massive, very slimbtly effervescent, clear boundary.	뒫
432- 608 Fil) (170-239)	light clave brown (2,5Y5/4) fine sand, slightly effervescent, indeterminate boundary.	S. S.

APPENDIX B

Particle Size and Carbonate Data

Table B-1. Particle Size and Carbonate Data.

CORE	DEPTH (cm)	PAR	ricle size	(4)		CARBONA INERALS	
		Sand 2mm-63um	Silt 63um-2um	Clay 2um	Cal-	Dolo- mite	Total Car-
DLC-28	0- 22 22- 34 34- 46 46- 63 63- 80 80- 98 98-110 110-123 123-139 139-155 155-168 168-183 183-199 199-202 202-211 211.224 224-240 240-260 260-280 280-300 300-320 320-340 340-360 380-400 400-418 418-440 440-480 480-520 520-570 570-620	65.86 91.85 92.15 94.62 94.09 93.23 88.91 71.72 50.78 32.73 31.60 82.34 53.51 76.31 85.31 86.31 87.60 87.60 87.60 87.60 87.60 87.60 87.60 87.60 87.73 87.60 87	13.88 4.82 5.35 3.57 4.39 5.35 8.59 20.75 8.25 42.16 21.18 12.16 22.16 23.31 13.06 23.31 24.18 13.06 25.40 47.67 47.67 47.67 47.09 47	20.26 3.33 2.50 1.81 1.52 1.42 2.59 14.00 20.19 24.48 27.95 26.24 16.62 17.18 8.18 5.53 17.39 18.45 17.39 18.45 17.39 18.45 17.39 18.45 17.39 18.45 17.39 18.45 17.58 17.58 17.58 17.58 17.58	000000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000000000000000000000000000000000000
MLC-19	620-670 670-720 0- 17 17- 32 32- 43 43- 57 57- 76 76- 94 94-107	0.97 0.98 0.43 0.41 0.38 0.24 0.14	28.15 7.51 85.95 83.00 80.64 79.83 80.54 78.07 75.49	7.05 2.55 13.08 16.02 18.93 19.77 19.08 21.69 24.37 26.08	0.75 1.24	8.83 6.20	9.58 7.44

Table B-1. (continued)

CORE	DEPTH (cm)	PART	TICLE SIZE	(\$)	<u>M</u>	CARBONA IINERALS	(%)
		Sand 2mm-63um	Silt 63um-2um	Clay 2um	Cal- cite	Dolo- mite	Total Car- bonates
	120-132	0.14	76.41	23.45			
	132-152	0.16	75.03	24.81			
	152-169	0.23	71.14	28.63	0	0	0
	169-186	0.26	76.62	23.12	0	0	0
	186-210	0.45	85.06	14.49	0	5.01	5.01
	210-235	0.59	88.69	10.72	0	10.37	10.37
	235-258	0.45	91.17	8.38	0	9.94	9.94
	258-269	0.53	79.98	19.49	0	7.95	7.95
	269-280	0.60	82.17	17.23	0	8.43	8.43
	280-288	0.42	90.23	9.35	0	11.71	11.71
	288-294	1.04	90.98	7.98	0	10.39	10.39
	294-309	0.52	83.49	15.99	0	11.23	11.23
	309-325	0.50	84.64	14.86	0	12.07	12.07
	325-340	0.66	85.00	14.34	Ō	10.43	10.43
	340-360	1.57	66.91	31.52	Ö	0.64	0.64
	360-380				Ō	0.41	0.41
	380-400				Ō	0.75	0.75
	400-420	2.01	67.72	30.78	Ö	0.75	0.75
	420-442	2.81	71.98	25.21	Ö	5.47	5.47
	442-458	2.41	77.82	19.77	Ö	9.53	9.53
	458-478	1.86	87.33	10.81	Ö	16.19	16.19
	478-498	4.89	84.88	10.23	Ö	17.26	17.26
	498-520	4.92	82.99	12.09	Ö	16.09	16.09
	520-548	0.77	85.82	13.41	Ö	15.60	15.60
	548-563	4.57	90.78	4.65	Ö	6.82	6.82
	563-570	67.64	22.51	9.85	Ö	7.95	7.95
	570 - 575	74.77	20.58	4.65	Ö	6.89	6.89
	310 313	1	20.50		•		

APPENDIX C

Outline of Late Wisconsinan and Holocene Geology of the Lower Illinois River Valley

by Edwin R. Hajic

The purpose of this appendix is twofold: first, to briefly summarize the geomorphology, stratigraphy and depositional environments, and outline a chronology of late Wisconsinan and Holocene events in the lower Illinois River Valley; and second, to report 21 radiocarbon dates from levee and drainage districts, 11 of which are previously unreported (Table C-1). Most descriptive information contained in previous levee and drainage district reports (Hajic and Hassen, 1980; Hajic, 1981b;c; 1983b; Hajic and Leigh, this volume) is not repeated here and is deferred to a more comprehensive summary report now in preparation. Similarly, not all evidence or supporting agruments are developed here.

The geologic history outlined represents a collection of working hypotheses. It is certain there will be some refinement or revision of these ideas as further analyses of the hundreds of collected cores takes place.

Prior to summarizing geologic events, several salient points regarding the general geomorphology of the lower 120 km of the Illinois Valley which constitutes the project area need to be presented. A variety of late Wisconsinan and very early Holocene terraces of diverse origin and morphology are recognized in the lower valley (Figures C-1 and C-2). Two general down-valley trends are evident in all but the Deer Plain Percent valley area occupied by terraces decreases and sequentially lower terraces progressively drop out (Figures C-1, C-2 and The only exception is the Deer Plain Terrace for which the C-3). opposite is true (Rubey, 1952). In the Illinois Valley, the Deer Plain is characterized by a reverse slope relative to the present Illinois It is broad and featureless except for some dunes at the extreme southern end. The Bath Terrace (Wanless, 1957; Styles, 1984) is mantled almost entirely by dunes and has a relatively low slope. In contrast, the Bluffs Terrace (Styles, 1984; Hajic, 1983b; this report) is relatively steep and grades up-valley to the Bath (Figure C-3). The Bluffs is a slightly undulating surface dissected by a broad shallow paleochannel, the Bug Island Paleochannel. The Bluffs Terrace and paleochannel abruptly end at a chain of Bath Terrace remnants cutting diagonally across the valley. The Keach School Terrace (Butzer, 1977) is

Table C-1. Lower Illinois River Valley Levee and Drainage District Fadiocarbon Dates.

Age (HCYBP)	Lab #	Location	Proventence	Context	Material Dated ⁴
14,590±240	1868-1255	SE SE SW Sec24 TIÓN RI3W	MLC-96, C, D	From Unit 3 ² slackwater silt in Bug Island Paleochannel beneath Unit 5 ² alluvial fan silt.	Uncarbonized plant debris: wood (mostly coniferous, a little diffuse; porous); bark; herbaceous plant material; spruce needles.
14,360 <u>±</u> 290	1865-1263	SE SE SW Sec24 T17N R13W	DLC-12A-F	From base of Unit 3^2 in Bug Island Paleochannel beneath Unit 4^4 eolian sand.	Uncarbonized plant debris: conjferous wood and bark; abundant spruce needles; few fir needles; herbaceous plant material.
13,390±190	1565-894	NN SW SW Sec4 T8N R13W	NLC-42A, B	From lacustrine silt immediately below interlaminated black & reddish brown clay, below olive lacustrine clay, the Deer Plain Terrace surface, and alluvial fan.	Primarily uncarbonized spruce, cedar wood and bark; some spruce, white cedar and fir needles.
13,360±240	ISGS-1264	SE NE NW Sec13 T15N F13W	MLC-34	From upper Unit ² (lower Unit 3 ³ ?) laminated silt interstratified with fine sand in Bug Island Paleochannel beneath beneath Unit 6 upland derived silt.	Uncarbonized plant debris: herbaceous plant material; abundant spruce needles; few fir needles; some conferous wood and bark.
13,340±180	1865-1284	SW SE SE Sec26 T16N R13W	M1.C-24	From Unit 3 ² slackwater silt in Bug Island Falecohannel beneath Unit 5 ² alluvial fan silt.	Uncarbonized plant debris: herbaceous plant material; seed: (primarily Cyperaleae and Potamageton); conifer wood; spruce needles.
13,010±140	1868-900	SE SW NW Sec21 Tiin Ri3W	нгс-38с, в	From lacustrine silt interlaminated with reddish brown clay below olive clay, the Degr Plain Terrace and the Buck Lake member ³ of the Cabokia Alluvium.	Primarily uncarbonized conferous wood, bark; little charcoal; some spruce and fir needles.
12,360 <u>±</u> 240	1565-1283	SE SE SW Sec24 T16N R13W	MLC-9A,B,C (6.90)	From Unit 3 ² slackwater silt in Bug Island Paleochannel beneath Unit 5 ² alluvial fan silt.	Uncarbonized plant debris: conferous wood and bark; seeds (primarily Polygenam and Cyperaceae); herbaceous plant parts; few spruce needles.
12,006±106	1365-911	SE NE SW Sec5 TBN R13W	NLC-35A-V	From laminated silty clay and sand beneath Keach School Terrace and inset into Deer Plain Terrace.	Primarily uncarbonized conferous wood (with and without resin ducts); spruce needles; some bark, seeds and other non-woody fragments.
11,070±190	1868-1277	SH NK NW Sec24 T14N R13W	VASCON-2	From fine sandy loam immediately below below depressional lense of twigs, peat, decomposed organics on Bath Terrace remnant(?) below eolian sand.	Uncarbonized wood (<u>Fraxinus</u> ?).
10,900± 80	ISGS-1120	SW NW NW Sec24 T14N R13W	VASCON-1A, B, D	From depressional lense of twigs, peat, and decomposed organics on Jath Terrace remnant(?) below eolian sand.	Uncarbonized wood (few pieces of diffuse porous).
9,830±160	1565-1281	NE SE NN Sec14 T16N H13W	MLC-29	From Unit 2^2 fine & medium sand w/silt and clay laminae in Bug Island Paleochannel.	Uncarbonized wood and bark (no conifer wood or needlet present),

(continued)	
te C-1.	
Tabl	

Age (RCYBP)	Lab /	Location	Provenience	Context	Material Dated ⁴
9,750± 70	1.868-1264	SE SE Sec2 TI4N R14W	MVT-1B	From near base of stratified and laminated silt unit filling old meander belt of Mauvaisse Terra Greek which inclses Keach School Terrace and enters anastomosing paleochannel system.	Primerily uncerbonized nonconferous (diffuse and ring porous) wood and bark; some uncarbonized plant debris.
9,480±130	ISGS-1135	SW SW Sec30 T 8N R13W	NLC-BR11U-56	From top of olive gray clay at depth below sand to sandy silt, then silty clay with organics and shell fragments.	Uncarbonized ash wood (<u>Eracinus</u> sy.).
9,300±150	1565-1122	NW NE NE Sec4 TI2N R13W	Trc-#0	From silty clay to clayey silt unit below Buck Lake member ³ of the Canokia Alluvium.	Uncarbonized diffuse porous wood; tark; partially decomposed plant debris.
6,320≠ 90	1565-1278	NW SE SW Sect Tith Rith	QSR-11(F4)	From the Quasar (Archaic) site within silty clay loam Illinois River natural levee deposits. At depth is reddish brown clay.	Dispersed charcoal: ca. 95% nutshell (almost all thick shelled <u>Carve</u>) and wood (some <u>Juglana</u>).
5,700±140	1868-930	NE NE NE Sec32 TI2N R13W	HLC-11A	From base of paleochannel-filling Hartwell member of the Cahokia Alluvium, below natural levee of morgan slough consisting of Buck Lake member silty clay loam.	Primarily nonconferous wood; nor-woody plant fragments; some stems, bark, seeds; little charcoal.
5,000± 70	ISGS-1095	NW SE SE SEC29 TI3N RI3N	TLC-55	From base of paleocharnel-filling Hartwell member of the Cahokia Alluvium, belo Buck Lake member . Early Woodland cultural meterials at the ground surface.	Uncarbonized section of birch branch (<u>Betula</u> sp.) about 30 years in age.
3,650± 70	1868-903	SE SE SW Sec32 TI2N R13W	HLC-42A,B	From upper third of paleochannel-filling Hartwell member ³ of the Cahokia Alluvium below the McFain ³ and Buck Lake members.	Primerily uncarbonized and carbonized bark and nonconiferous wood; some seeds and black walnut shell.
2,420± 70	1868-1120	NE NE NW Sec15 T12N K13W	LLC-118	From midsection of silty clay to sand unit infilling floodbasin slough or yazoo stream system and belonging to the Buck Lake member of the Cahokia Alluvium.	Uncartonized diffuse porous wood and fine partially decomposed organic matter.
1,980± 80	1868-1084	NE NE NW Sec15 T12N F13W	LLC-11A	From top of silty clay to sand unit infilling floodbasin slough or yazoo stream system and belonging to the Buck Lake member ³ of the Cahokia Alluvium.	Primarily uncarbonized bark and nonwoody plant debris; some wood (<u>Flatanus, Ulaus, Carya,</u> unidentifiable diffuse porous).
1,780± 70	ISGS-1286	NW NW SE Sec4 T15N R13W	MLC-57	From near-surface Unit 8 ² in Bug Island Paleochannel.	Bulk sample of peaty heavy silt loam.
Ages are ca	lculated on t.	Ages are calculated on the basis of a C-14 half-life	half-life of 5,569 years.		

Ages are calculated on the basis of a C-14 half-life of 5,569 years.
2Unit numbers from this volume.
3Informal members from Hajic, 1983b.
4Identifications by Nancy Asch, Archeobotanical Laboratory, Center for American Archeology.

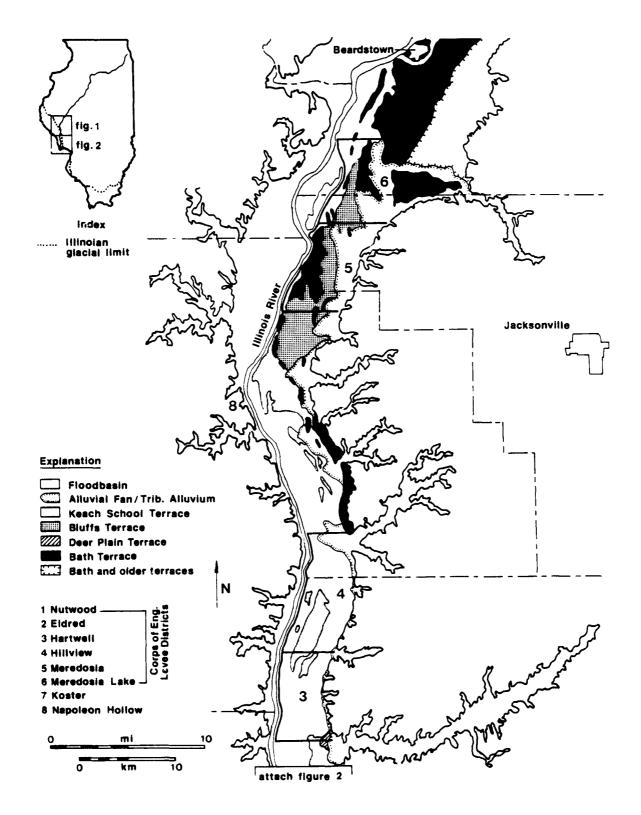


Figure C-l General geomorphology of the lower Illinois River valley, north section, east of the Illinois River

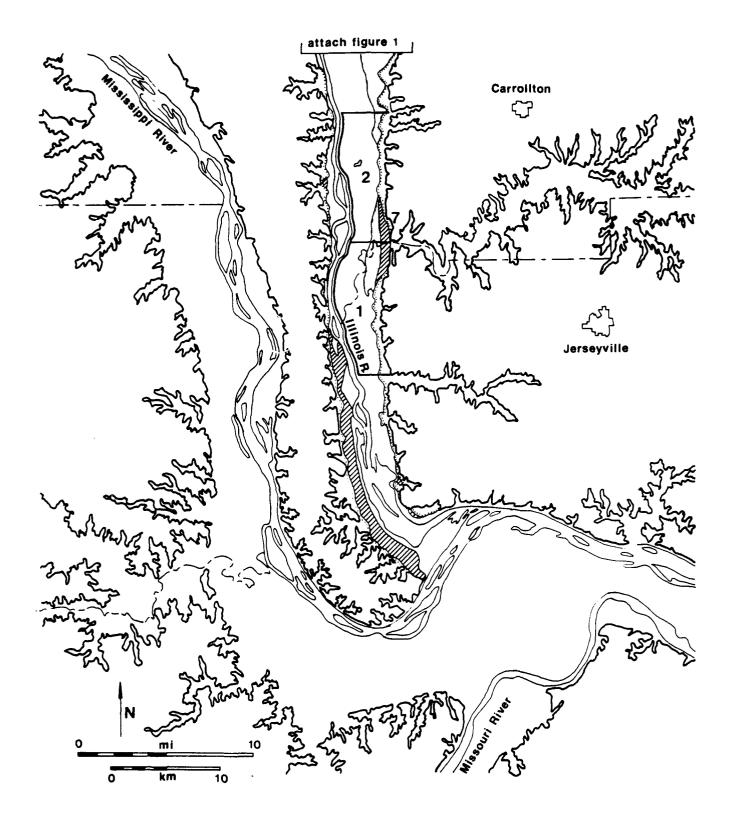


Figure C-2 General geomorphology of the lower Illinois River valley, south section

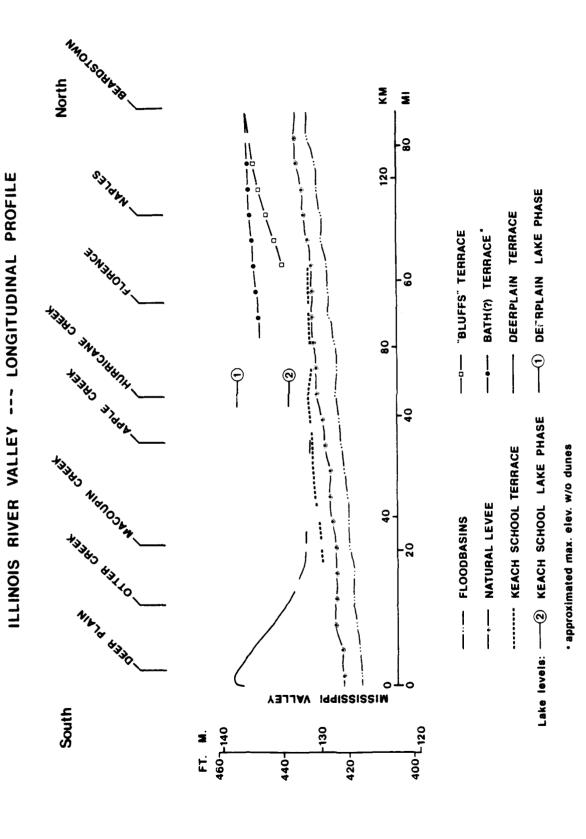


Figure C-3 Longitudinal profile of major geomorphic surfaces, lower Illinois River valley

almost featureless and exhibits a nearly level surface. It occurs south of the chain of Bath remnants. Typical Peardstown Terrace (Wanless, 1957) morphology consists of point bars with evidence for scroll bars. In mapping the Beardstown Terrace, which is identified only in a restricted reach of the valley above and below Beardstown, Wanless undoubtedly included some isolated Bath Terrace remnants.

Several distinct paleochannel systems are also evident. The Bug Island Paleochannel (Hajic and Leigh, this volume; Styles, 1984) is a broad, shallow and straight channel cutting the Bath and Bluffs terraces. Although largely buried by upland derived deposits, it can be traced from east of Beardstown south to the diagonal chain of Bath Terrace remnants where it ends or is abruptly truncated. The Bug Island Paleochannel is closely associated with the Bluffs terrace and several channel bar/islands are considered to be Bluffs remnants. A broad, shallow anastomosing system, consisting of one to three branches, cuts the Keach School Terrace and is younger than the Bug Island Paleochannel. This paleochannel system has common mid-channel bars. Remnants can be traced at least as far south as Macoupin Creek.

This "multiple channel" system is precursor to an entrenched system consisting of one to two branches oriented along channel branches of the anastomosing system, favoring straight reaches, and favoring a course along the western valley margin. The considerably narrower modern Illinois River course consists of straight reaches, probably inherited from this entrenched system, connected by broad bends. It follows the western valley margin from Valley City to the mouth.

Nearly all preserved paleochannel reaches have been partially reworked by yazoo and deferred tributary stream systems.

In sharp contrast to all other Illinois River paleochannel systems are a series of meanders restricted to the middle Illinois Valley and best expressed several kilometers northeast of Beardstown. Associated point and scroll bars were mapped as typical Beardstown Terrace by Wanless (1957). Styles (1984) has inferred an early Holocene age for

this meandering system from its possible lower elevation in relation to the Keach School Terrace. That the the meanders were produced by the Sangamon River which presently enters the Illinois Valley just north of Beardstown remains a possibility.

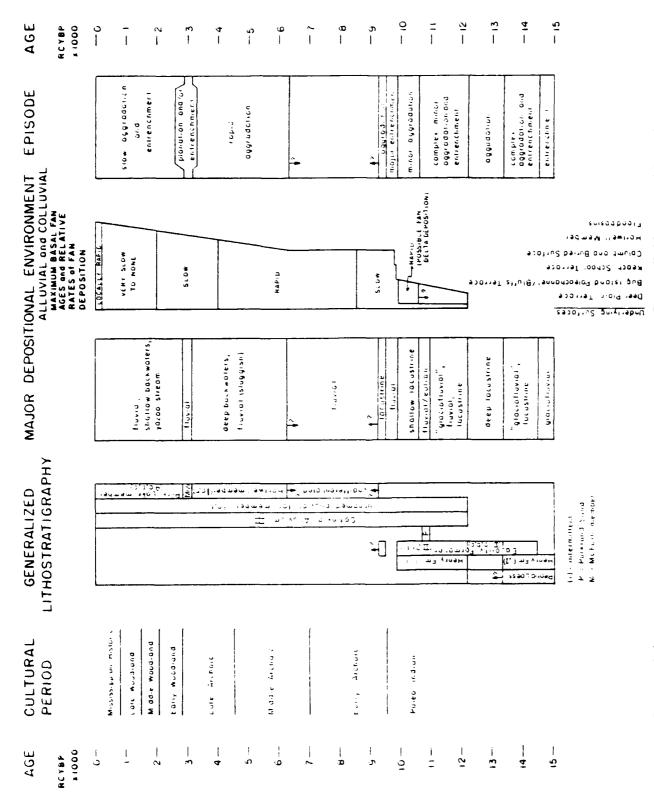
Figure C-4 schematically summarizes generalized stratigraphy, depositional environments and episodes of lower Illinois Valley history. Figure C-5 schematically illustrates in cross-section the stratigraphic relationships of most lighologic units. It is clear the lower Illinois record is as much that of a settling basin as a river and outwash stream.

"Kankakee Flood" - 13,300 B.P.

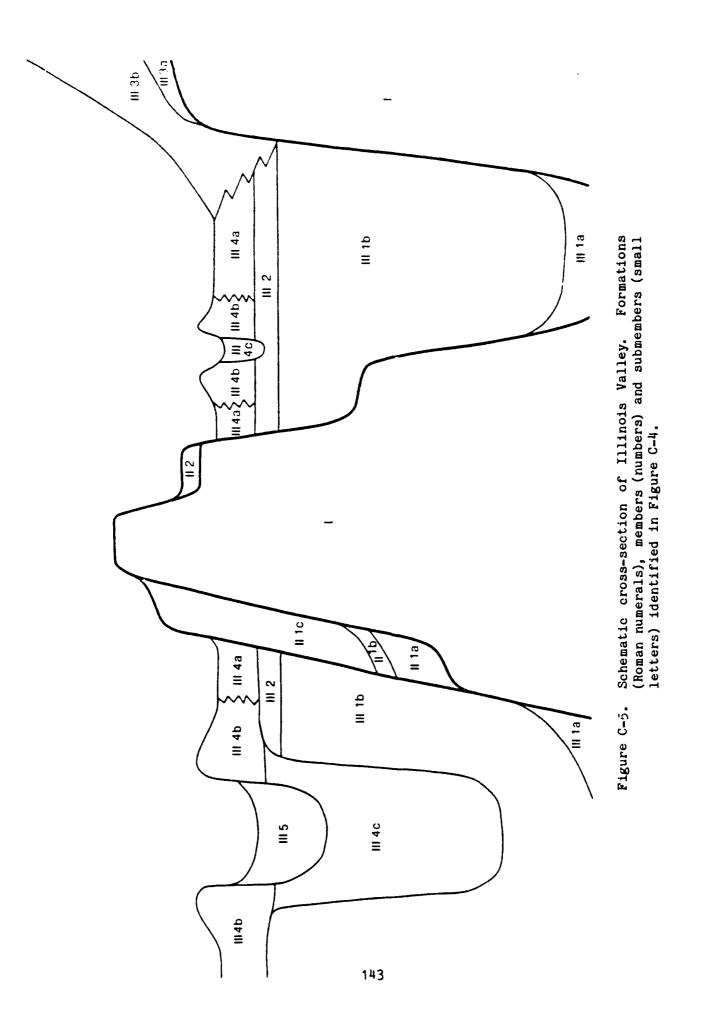
The Bug Island Paleochannel system and the Bath Terrace developed on Valley train sand and gravel probably in response to the "Kankakee Flood*, described as a large discharge down the Illinois Valley during construction of the Valparaiso Moraine system sometime between 14,000 and 15,000 B.P. (Willman and Frye, 1970). Although large discharges probably occurred, there is no indication they were catastrophic. Illinois Valley discharge was probably augmented by drainage from an initial Glenwood phase of Lake Chicago between about 14,500 and 13,500 B.P. (Hansel, et al., in preparation). Oldest radiocarbon dates from the Bug Island Paleochannel system are 14,590±240 (ISGS-1285) and 14,300±290 B.P. (ISGS-1263) (Table C-1) and correspond with what possibly is initial Glenwood phase discharge. The dates also indicate the Bug Island Paleochannel system and Bath Terrace may just predate about 14,600 B.P. Hansel et al. indicate from about 13,500 to 13,000 the Chicago Outlet was temporarily abandoned in favor of lower outlets. This would cause a relative decrease in Illinois River discharge but the Bug Island Paleochannel system, at least in part, probably remained functional.

13,300 - 12,000 B.P.

Rubey (1952) suggested the Deer Plain Terrace resulted from blockage of the mouth of the Illinois Valley by an aggrading Mississippi flood-plain. Dates of $13,390\pm190$ (ISGS-894) and $13,010\pm140$ B.P. (ISGS-900) from earliest lacustrine silt below the Deer Plain Terrace indicate aggradation of the Mississippi Valley effectively dammed the mouth of the



Generalized summary of lower Illinois River Valley stratigraphy, depositional environments, and episodes of lower Illinois Valley history. Numbers and small letters under lithostratigraphy refer to informal members and submembers (see Figure C-5). Figure C-4.



Illinois Valley prior to 13,300 B.P. Clayton (1982) has inferred periods of aggradation and degradation in the upper Mississippi Valley based upon glacial, lacustrine, and glaciofluvial events in the southern Agassiz and western Superior basins. A period of Mississippi Valley aggradation postulated to have begun prior to 13,500 B.P. and to have continued until about 12,200 B.P. (Clayton, 1982) agrees with blockage of the Illinois Valley.

ISGS-894 and ISGS-900 are directly associated with reddish-brown clay laminae and correspond to a third previously unreported date of 13,360±100B.P. (ISGS-875) from uncarbonized coniferous wood and bark (Hajic, unpublished data). ISGS-875 is also associated with reddishbrown clay laminae in the Eldred District. The reddish brown clay can be traced deep in the subsurface below the Deer Plain Terrace (lake plain) and associated lacustrine clay in the lower Illinois Valley southward to the lower solum of surface soils on the sediment dam part of the Deer Plain Terrace thus indicating the majority of Mississippi Valley aggradation preceded 13,300 B.P. The two lower Illinois Valley dates are from unoxidized, unleached silt with reddish brown clay, some of the first sediments accumulating in the lower Illinois Valley in response to the sediment dam. They mark initiation of a high lake phase (Deer Plain phase) in the lower valley. Farther upvalley dates of 13,360±240 (ISGS-1262) and 13,340 \pm 180 B.P.(ISGS-1284) were recovered at or near the transition from glaciofluvial to lacustrine sediments in the Bug Island Paleochannel and firmly support lake initiation. Thick sequences of green moutmorilloritic clay accumulated in the resultant lake until it drained.

Preserved remnants of the lake plain and sediment dam comprise the Deer Plain Terrace in the lower Illinois Valley. A date of 12,000±100 B.P. (ISGS-911) is from slackwater and alluvial sediments below a Keach School Terrace remnant which is inset to a Deer Plain remnant. The date indicates the Deer Plain Lake phase probably drained just before 12,000 B.P. and the Deer Plain Terrace is older than 12,000 B.P. A thin, firm, laminated clay unit with pebbles below ISGS-911 records an erosional interval predating 12,000 B.P. (Hajic, 1981b:85). The erosional episode

is probably related to drainage of the Deer Plain lake phase. A date of 12,360±240 (ISGS-1283) was obtained from the lacustrine sediment unit in the Bug Island Paleochannel. A date of 12,325±75 B.P. (ISGS-415) (Butzer, 1977; Hajic, 1981a) was recovered from lake margin related sediments (Hajic, unpublished data). The exact context of ISGS-415 is questionable, but the two dates narrow the interval of lake drainage and exposure of the Deer Plain Terrace to between about 12,325 and 12,000 B.P. This interval corresponds with an estimated time of initiation of Mississippi Valley downcutting of 12,200 (Clayton, 1982) during the Twocreekan.

In the Mississippi Valley, the deposits below the Deer Plain are composed of coarser alluvium than in the Illinois Valley (Rubey, 1952). A wood sample collected from sandy outwash 23 feet below a terrace surface at the mouth of the Missouri River dated to 12,148 B.P. (Flint and Dewey, 1951). Flint and Dewey (1951) correlated the terrace with the Festus Terrace of Robertson (1938). Goodfield (1965) suggested the date could possibly be from below a Deer Plain remnant. If the date is valid, the remnant is probably not Deer Plain, but rather a younger terrace and fill indicating a second episode of aggradation in the Mississippi Valley to levels approaching that of the Deer Plain. At the Sievers South Quarry section where Deer Plain sediment dam deposits are exposed (Hajic, unpublished data), a second, lower terrace is preserved. This unnamed terrace verifies an erosional episode between Deer Plain formation and a second episode of Mississippi Valley aggradation. A highly dynamic, fluctuating Mississippi is implied.

Flock (1984) names and describes surficial sediments of the Savanna Terrace in the Mississippi Valley extending from Pepin County, Wisconsin to Jackson County, Illinois. He correlates the Deer Plain as part of the Savanna Terrace, and in fact Rubey (1952) originally mapped the Deer Plain in both Mississippi and Illinois Valleys. Flock characterized the upper 1 to 3 meters of Savanna Terrace sediment as being dominated by red and gray clay originating from Lake Superior sources and lake basin(s) farther to the west, respectively. These are the same deposits traced deep into the Illinois Valley subsurface. Interpreting Hajic's dates of

13,360 \pm 100 (ISGS-875), 13,390 \pm 190 (ISGS-894) and 13,010 \pm 140 B.P. (ISGS-900), and Goodfield's date of 12,148 \pm 700 B.P., he concluded the Savanna Terrace formed sometime between 13,000 and 9500 B.P.

Flock considers the red and gray clays to be deposited during flooding of either early Lake Superior sometime between 12,000 and 11,000 B.P., Lake Grantsberg sometime between 12,700 and 11,800 B.P. or/and Lake Agassiz sometime after about 12,000 B.P. In view of earlier discussions, these ages, with possible exception of early Lake Grantsberg ages, are probably too young for the Savanna Terrace and associated reddish brown clay. They are all certainly too young for the considerable thickness of Deer Plain (Savanna Terrace) forming sediments below the surficial reddish-brown clay zone at the mouth of the Illinois Valley.

Elevations of the Illinois Valley mouth sediment dam and documented wave-cut scarps preserved beneath valley margin alluvial fans in the Illinois Valley, along with soil-geomorphic relationships on the Deer Plain Terrace, indicate lake levels were high enough to inundate the entire lower valley and considerable reaches of most tributary streams (Figure C-3).

During this Deer Plain lake phase, the Illinois River, when active, would have been terminating at the head of the lake, probably north of Beardstown. Hansel et al. (in preparation) indicate the Chicago Outlet was operating when Glacial Lake Chicago in the Michigan basin was at the Glenwood level probably between 14,500 and 15,500 B.P. and again between 13,000 and 12,200 B.P. There would have been relatively reduced discharge down the Illinois Valley as the Deer Plain sediment dam formed. Stratified lacustrine fill in the Bug Island Paleochannel may in part reflect distal alluvial fan delta deposition. Terrace elevations are such that surficial sediments associated with the Bath or Bluffs Terrace may also be lacustrine in origin (Figure C-3).

The existance of a lake in the lower to mid-Illinois Valley from after 13,300 B.P. to about 12,325 B.P. indicates conditions unfavorable for deposition of loess with an Illinois Valley source during this

interval and probably Mississippi Valley source as well. The time range is compatible with estimates on terminal loess deposition for the region (McKay, 1977).

12,000 - 9,800 B.P.

A detailed chronology of Illinois Valley events for the period following drainage of the Deer Plain lake phase until about 10,600 B.P. is elusive. It is probably characterized by fluctuating intermittant glaciofluvial, fluvial and lacustrine regimes with only little indication of deposition. Where sedimes is from this interval have been preserved, such as in the Bug Island Paleochannel, they record a varied history of slackwater deposition with only occasional fluvial input. There is no indication lake levels approached those of the Deer Plain lake phase.

Exposure of a sandy alluvial plain (Bug Island Paleochannel system) is evidenced by the migration of dunes onto Bath Terrace remnants shortly after 10,900 B.P. Radiocarbon dates of 10,900±80 (ISGS-1169) and 11,070±80 B.P. (ISGS-1277) were obtained from wood samples from a woody peat and underlying fine sandy loam, respectively, which were overlain by dunes and underlain probably by reworked valley train material. The presence of fluvially reworked dunes or absence of dunes on the Bluffs Terrace suggests it may be younger than about 10,900 B.P.

By about 10,600 B.P. and perhaps slightly earlier, another lake phase was initiated in the lower Illinois Valley and continued into the very earliest Holocene, about 9800 B.P. The lake plain which was exposed around the latter date is the Keach School Terrace.

Styles (1984) has recovered organic matter from slackwater sediments at the mouth of Napoleon Hollow which dated 9950±260 (ISGS-819). The sample was above the Keach School Terrace elevation indicating the Keach School lake phase lasted at least through 9950 B.P. Similarly, Hajic (1983a; in preparation) obtained a wood sample from a corresponding slackwater unit in Campbell Hollow on the east side of the Illinois Valley. The material yielded a date of 10,460±220 B.P. (ISGS-989). The

Keach School Terrace is incised by an early meander belt of Mauvaise Terre Creek which was contemporaneous with the "multiple channel" system of the Illinois River. Wood from basal slackwater sediment filling the meander belt dated to 9750 ± 70 B.P. (ISGS-1264) (Table C-1) indicating Keach School Terrace formation predates this age.

Keach School lake phase related deposits include a surface veneer of interstratified silt, silty sand and sand on the Keach School Terrace. At several locations the individual fine textured beds were tracable for hundreds of feet (Hajic, unpublished data). Basal laminated alluvial fan silt deposits occurring in the south segment of the preserved Bug Island Paleochannel probably date to this interval. They reflect either rapid alluvial fan accumulation or alluvial fan delta deposition during temporarily higher lake level stands.

A probable shoreline is recorded along the northern extent of the Keach School Terrace at the diagonal chain of Bath Terrace remnants. The Bug Island Paleochannel is either truncated by this Keach School lake phase or at least in part contemporaneous with it because the paleochannel appears to abruptly terminate on the north side of the chain of Bath Terrace remnants.

Changes in relative amounts of discharge entering the lower valley during this interval can be inferred from work in the Lake Michigan Basin by Hansel et al. (in preparation). During the Two Creeks low lake phase in the Lake Michigan Basin, beginning about 12,000 B.P., the Chicago Outlet was temporarily abandoned. Considerably reduced discharge would have been entering the lower Illinois Valley. An increase in discharge would have accompanied reactivation of the Chicago Outlet at about 11,800 B.P. with establishment of the Calumet Lake phase. Shortly before 11,000 B.P. the Chicago Outlet was abandoned again as deglaciation opened outlets to the east and Illinois Valley discharge decreased. It is shortly after 11,000 B.P. that an episode of dune formation is evident in the lower Illinois Valley.

During the Twocreekan interval the Mississippi River is inferred to

have been downcutting (Clayton, 1982). After a brief period of aggradation, another interval of downcutting occurred until about 10,800 B.P. The beginning of the aggradational episode at this time may correspond with initiation of the Keach School lake phase. According to Clayton and Moran (1982) and Clayton (1982), the Marquette advance of the Superior Lobe was probably responsible for blocking eastern outlets of Lake Aggassiz initiating the Emerson Phase in that basin at 9900 B.P. With blockage, Lake Aggassiz drained into the Mississippi River via the Minnesota River. The episode of Mississippi Valley downcutting which this chain of events initiated caused the Keach School lake phase to drain and the Illinois River to downcut rapidly. Lake drainage probably caused the streamlining of several Bath Terrace remnants along the south and east part of the diagonal chain of Bath remnants.

9800 - 7000 B.P.

Initial downcutting occurred in an anastomosing pattern of 1 to 2, and possibly 3, channels which are best expressed immediately north and south of highway U.S. 36. Morphology of this channel system may have been influenced in part by Keach School lake drainage. This channel system was only temporary and with continued rapid downcutting some branches where abandoned and preserved. There is some evidence to suggest the preserved bed of this anastomosing system was subaerially exposed for an undetermined period of time. An early Archaic site, now buried by late Holocene deposits, is preserved on this surface in the Eldred District and there are some indications of associated soil development (Hassen and Hajic, 1983). This buried surface, which is most extensive south of the Hillview District, is informally referred to as the Columbiana surface.

Ultimately, downcutting was on the order of at least 15.2 m for channel bases. River stage fluctuation is not yet clear. There is no evidence of subaerial exposure of Holocene surfaces (i.e., floodplain) greater than 5 to 6 m below present floodbasins. Near-surface sediments below the Keach School Terrace indicate subsequent Holocene river (and flood) and lake stages did not eclipse Keach School elevations to leave a recognizable overbank deposit. Apparently all fluvial and lacustrine events post-dating the very early Holocene downcutting were confined to

the incised channels defined by the Columbiana, Keach School and older terrace margins, and the bedrock valley walls.

Maximum downcutting was accomposshed by about 9500 B.P. and a probable lake phase, restricted to incised channels, ensued for an unknown length of time. Radiocarbon dates on wood from slackwater(?) clay at relatively low elevations are 9480 ± 130 (ISGS-1135) and 9300 ± 150 (ISGS-1122) (Table C-1).

The period between 9000 and 7000 B.P. is not well known and there are only several areas where deposits from this interval are recognized at all. The present general location of the Illinois River is currently viewed as the location of the main channel of the several utilized during downcutting with only several areas of exception. This view tends to be supported by Corps of Engineers boring records along artificial Illinois River levees which indicate the greatest depths of fine textured sediments found in the valley. The Illinois River, when functioning as such, has apparently assumed a general position along the western valley margin and has not varied significantly throughout the Holocene. Largely negative evidence for this is derived from the slackwater Hartwell member The Hartwell, filling paleochannels incised of the Cahokia Alluvium. during the initial Holocene and deposited between about 6000 and 3000 B.P., constitutes the bulk of Holocene valley fill, yet it is a very uniform deposit for considerable thickness at any given location. Texturally and structurally it exhibits little, if any, indication of alluvial channel, bar, natural levee, or floodplain facies.

7000 - 3000 B.P.

Infilling of paleochannels was possibly underway by at least around 7000 B.P. as indicated by stratigraphic contexts of a buried Archaic horizon at the Napoleon Hollow Site (Styles, 1984). Sometime before 6400 B.P. the Illinois River clearly established its course along the western side of the valley south of the Hillview district and is evidenced by remnants of a well developed natural levee system. The Quasar site, a shallowly buried Archaic horizon within these natural levee deposits, yielded a date of 6320±90 (ISGS-1278) (Table C-1). In downcut

paleochannel segments abandoned by Illinois River straightening and channel definition by first subaqueous, then subaerial natural levee formation, Hartwell lacustrine or nearly slackwater conditions were established by 5700±140 B.P. (ISGS-930) and most likely continued beyond 3650±70 B.P. (ISGS-903) (Table C-1). Hartwell deposition occurred in relatively deep backwaters. Deposition was relatively rapid and paleochannels infilled to several meters below the present floodplain surface. Structure of lower soil horizons is preserved at the top of the Hartwell indicating an emergent floodplain.

3000 B.P. - 1920's

The presettlement general structure of floodbasins and natural levees evolved during the 500 years predating about 2500 B.P. Around 3000 B.P. a primarily erosional eposide, referred to as the McFain event, effectively planed the Hartwell surface, reworked terrace margins, and scoured portions of the Columbiana surface. The associated McFain member probably represents a lag resulting from either a large Illinois River discharge or active yazoo streams meandering across the emergent floodplain. A radiocarbon date of 2890±75 B.P. (ISGS-143) on shell (Coleman, 1974) was obtained from deposits interpreted to be the McFain.

Buck Lake member deposition followed in shallow backwater lakes, possibly intermittent, as a floodbasin network of coelescing tributary creeks rapidly built a natural levee system. Slow aggradation occurred in floodbasins. The Illinois River went through minor redefinitions of its channel position and there is evidence to suggest a second natural levee set, finer textured than the first, rapidly developed during this interval. Early Woodland settlements are common on the natural levees indicating they were well established by about 2500 B.P. Dates of 2420±70 B.P. (ISGS-1120) and 1980±80 B.P. (ISGS-1084) were recovered from the bottom and top respectively of fill from one of the floodbasin yazoo stream channels (Table C-1). The dates may indicate a rough range for the infilling and final deactivation of the yazoo system, but clearly more dates will be necessary.

The Illinois River has maintained its west side channel with little

modification throughout the last 2500 years as indicated by Early Woodland settlements on Illinois River natural levees (Farnsworth, 1976; Butzer, 1977).

APPENDIX D

Scope of Work

CULTURAL RESOURCE SURVEY OF SELECTED PORTIONS OF THE MEREDOSIA AND MEREDOSIA LAKE DRAINAGE AND LEVEE DISTRICTS

SCOPE OF WORK

- 1. Statement of Work. The work to be accomplished by the Contractor consists of furnishing all labor, supplies, materials, plant and equipment necessary to perform a Cultural Resource Survey of selected portions of the Meredosia and Meredosia Lake Drainage and Levee Districts, Scott, Cass and Morgan Counties, Illinois, and furnish a written report thereon as set forth in the Scope of Work.
- 2. Location and Description of Study Area. The project area is situated in the Illinois River floodplain between river miles 65.0-72.0 (Meredosia D & LD) and 72.0-79.0 (Meredosia Lake D & LD) in Scott, Cass and Morgan Counties, Illinois. The total area to be physically surveyed consists of 3140 acres and represents approximately a 20% sample of the entire area contained within the two districts (15,725 acres).

3. Study Plan.

- 3.1 General. The Contractor is responsible forthe formulation, justification and conduct of the study to include the design and execution of all survey methods and procedures as well as the presentation of the study results unless otherwise set forth in this Scope of Work.
- 3.2 <u>Sample Design</u>. The survey will be structured so as to investigate a representative portion of each topographic and physiographic zone (i.e., ridges, terraces, etc.). As a result, the Contractor will restrict his investigation to a 20% stratified random sample of appropriately selected zones. Before initiating the fieldwork, the Contractor will provide the Contracting Officer's Representative with maps showing the sample units selected and with a narrative describing how the units were chosen and describing the research goals and objectives, as these relate to larger questions about Illinois River Valley prehistory (i.e., a "research design"). The Contracting Officer's Representative will comment (see Paragraph 6.1).
- 3.3 Principal Informant Interviews. Principal Informant Interviews constitute preliminary surveys based on verbal descriptions of site locations. The Contractor will contact amateur archaeologists and collectors within the region in an attempt to identify the location of previously known archaeological or historic sites within the Meredosia and Meredosia Lake Drainage and Levee Districts. On-site analysis shall consist only of a visual confirmation of the verbal description.
- 3.4 <u>Pedestrian Survey</u>. The Pedestrian Survey will consist of an intensive on-the-ground survey of each sample unit, sufficient to determine the number and extent of cultural resources within each unit. This process will include one complete surface collection at each identified site.
- 3.5 <u>Lab Procedures.</u> Artifacts collected during survey activities shall be washed, permanently labeled and catalogued according to standard lab procedures. These collections shall be analyzed in an attempt to determine each site's temporal affiliation and horizontal surface distribution. All artifacts will be separated into various general

categories, then subdivided into smaller, functional and stylistic categories. These distributions shall be quantitatively assessed in a professional, concise manner.

- 3.6 <u>Curation of Material</u>. The report shall contain a statement indicating the exact location of all materials and records resulting from this contract work. This statement shall include at a minimum, the name and address of the curatorial building, the storage room number, and if possible, the rack, shelf or cabinet number where this material is stored. Containers in which artifacts are stored shall be clearly labeled "Property of the U.S. Government, St. Louis District, Corps of Engineers."
- 4. Final Report. The Contractor shall prepare a written report which presents and interprets survey results, and describes in detail data collection techniques. A discussion of each site located, its cultural affiliation and artifact assemblage, as well as their relation to other sites found during the survey shall be presented in the text of the report. These data shall then be compared to other previously reported sites in the Illinois River Valley and surrounding areas in order to place the results of this study into regional context. In addition the Final Report shall include the following:
- a. U.T.M. coordinates of each site, detailed site-specific descriptions, locational data and maps attached as appendix to the Final Report.
- b. Maps which accurately define site locations, site numbers, areas surveyed, and ground cover conditions as well as other pertinent data. These data must be recorded on U.S.G.S. topos (scale 1:24000) although other maps may be used as well.
- c. No hand lettering is acceptable other than that necessary to record data on base maps.
- d. Oversized maps will be folded and included in a pocket in the back of the appropriate report section or appendix.
 - e. A full set of reproducible maps, plates and drawings.
- f. Black and white prints (half-tones) of diagnostic and functionally significant artifacts will be incorporated into the report body or attached as appendix.
- g. A photographic log of annotated 35mm slides, showing each phase of lab and fieldwork in progress shall be included with Final Report original.
 - h. An abstract not to exceed one typewritten page.
- i. Completed site forms shall be submitted for each site identified during these surveying activities.
- 5. Permits and Rights of Entry. Rights of Entry upon work sites for performance of work under this contract shall be obtained by the Contractor. The Contractor shall obtain the necessary approval to enter on any private property and to permanently remove any artifacts recovered during subsequent surveying activities. Should access to certain portions of this project area referenced in Paragraph 2 above be denied, the actual amount of this order will be decreased in an amount equal to the percentage of difference between the original required acreage and that acreage actually surveyed.

6. Schedule of Work.

- 6.1 Research Design. Research Design (see Paragraph 3.2) shall be submitted to the Contracting Officer's Representative within 20 days of the date of the delivery order. The Contracting Officer's representative will review and comment within 7 calendar days of receipt of Research Design.
- 6.2 <u>Fieldwork</u>. All fieldwork related to this item shall be completed within 200 days after the date of the delivery order.
- 6.3 <u>Draft Report</u>. Five copies of the draft report shall be submitted by the Contractor to the Contracting Officer's Representative within 90 days after fieldwork is completed. Government representatives will review the report for compliance with the requirements of the contract and will return the preliminary report, together with any written comments thereon, which may require changes in the report, to the Contractor within 50 calendar days after its receipt. The report shall be organized in a manner consistent with the St. Louis District report format guidelines. The title page shall be organized in a manner consistent with the St. Louis District title page format guides.
- 6.4 <u>Final Cover</u>. While the St. Louis District is reviewing the contractor's draft report, the St. Louis District will prepare report covers for the final report and will forward these to the Contractor with draft comments. The Contractor shall be responsible for binding the final report in these covers, using Plastic Spiral Binding.
- 6.5 Final Report. The Contractor shall submit 30 bound copies of the Final Report, including the original copies signed by the principle investigator, to the Government within 30 days after the Contractor receives the St. Louis Districts written comments. A set of reproducibles of all drawings, plates and other graphics, including site forms, shall be furnished at the time of submission of the Final Report.
- 7. Extensions. In the event these schedules are exceeded due to causes beyond the control and without fault or negligence of the Contractor, this delivery order will be modified in writing, and the contract completion date will be extended one calendar day for each calendar day of delay.

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Plaster core number: 536 Location: SE-SE-SM-Sec.3c.T17N-K13H. Cass Countriblation: SE-SE-SM-Sec.3c.T17N-K13H. Cass Countriblation: Bostoner Eventuon: Bus Island Channel
3C5 marred Soil: Ambrau cla. Joan Elevation: 132.9m (436ft.) Cored bi: ESL - JEC

Dereth on Sout Horizon (10.) or Zone	Description	Classification
0- 111 SOLUII (-0- 44)	black (2,572/6) to olive prax (574/2) clax loam to loam.	ರ
1111- 127 C(UU) (-44- 50)	olive grav (5Y4/2) loam, weak coarse subangular blocks, noneffervescents one large 2.5Y2/0 loam krotovina, vers absurt boundars.	로
127- 273 Bt. (-50-107)	very dark star (10VRS/1) to 0)1ve brown (2.5V4/4) loam, fine sand to fine and medium sand, sradual boundary.	a.
273 360 Du (107-142)	olive brown (2.5Y4/4) medium sand, vers slightly effervescents clear boundars.	o,
360- 480+EU (142-189)	olive brown (2.574/4) rebbly medium and coarse vand, strongly effervescent, refusal.	3

ELC -2

Haster core number: 537 Location: SWISMISMISMS.ec.36.TI7N.EJ3W. Cass Count. Landscure Position: duns on Bath terrace edge 505 mapped soil: Sparta loan, sand Elvation: 133.5m. (435ft.) Cored by: DSL, JEC Described by: EFH

Teeth on Soil Horizon (in.) or Zone	Description	Unified Scil
0- 82 SOLUM (-0-32)	very dark blown (10VR2/2) to dark enalish brown (10VR4/2) leam fine sand, abruet beundari.	
82- 42) (32- 42)	dark granish brown (10VR4/2) to granish brown (2.5V5/2) silt loam with man, fine dark rellowish brown (10VR4/6) and clive brown (2.5V4/4) mottles, clear boundary.	TM - mo
158- 203 MDL (62- 80)	dark vellowish brown (10VR4/4) and light brownish grav (2.5%6/2) fine sandy loam and sand, silt loam, weall, laminated and stratified, with common medium (ellowish brown (10VR5/6) mottles, weak coarse subangular block,, noneffervescent, abrupt boundary.	er Se
203- 480 OL (50-189)	dark (e)) wuish brown (109K4/6) medium and coarse sand, single grain, noneffervescent, indeterminate boundari.	se SF
480- 560 DL (189-220)	praish brown (2.575/2) medium to comfre fand, single grain, noneffervescent, indeterminate bounder.	'n ŭ
550- 630 UL (220-248)	dark olive grav (SYS/2) silt, massive, noneffervescent, indeterminate boundar	턴
630	<pre>grailsh brown (2.575/2) to light brownish grai (2.576/2) coarse; ver, coarse sand, and Pebbles, strongly effervescent, refusal.</pre>	MS

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Master core numbers 538
Location 85.84.5ec.35.117N.F13W. Cass Count.
Location 85.84.5ec.35.117N.F13W. Cass Count.
Location 9c.311 mateum clas. loan.
Compared 5c.11 mateum clas. loan.
Cored bit Dile 46.
Eventbod bit Dile

Dueth on Soil Horizon	Description	Unified Soil Classification	freth on Soil Herizor (in.) or Zone	#
o- 40 sP01L . o- 16)	lear boundar.	ಕ	0- 162 SOLUM (- 0- 64)	
40 145 SOLUM + 16 - 57)	silt loam epiredon changing to silt. Clai loam at base, clear bounder	clas loam at ML	162- 200 MBL (64- 79)	
145 - 155 MDL (-57 - 94)	practs brown (2.5Y5/2) silt, fine sands loam, uith common medium sellowish brown (10YR5/6) mottles, noneffervescent, few 2.5t3/2 fine sand: loam lenses toward base, clear boundars.	odr Joans VKEV6) fine sands	200- 265 OL	
138- 28 5 mbl (-84 112)	hight brownish are: (2.500/2) fine said and grainish brown (2.500/2) silt: with common medium light cilive brown (2.500/2) mottles: noneffervescent: gradual boundar.	nd and gray- medium light ervescent:	265-490 U/DL (104-153)	
285° 425 0L (112-167)	sizenish gra, (55/5/1) sand, silt, laminated with rew medium sand lances toward base, nonerfervescent, few thin Fe lenses throughout, abrust boundar.	ninated with ML eroughout,	490- 675+U/DU (193-266)	
415- 660+070L (167-165)	clave (5Y5/3) medium to coarse sand with few rebbles toward base, noneffervescent, refusal.	ith few refusal.	5-j10	

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Haster core number: 589
Location: StuSM.SW.Sec.31.TIZN.RISM: Cass Count.
Landrower Fostion: dure on Baib ferrace edge
505 mapped soil: Ambraw cla. loam
Elevation: 155.9m (436ft.)
Fored to 155.9m (436ft.)
Fored to 155.0m (436ft.)

(10.) or Zone	Description	Classification
0- 162 SOLUM (0- 64)	sult loam empredon with clai loam to sulty claisoam subsoil, clear boundari.	로
162- 200 MBL (-64- 79)	praish brown (2.575/2) sand, silt loam to fine sand, loam, with common medium light olive brown (2.575/2) mottles, weak coarse subangular block, noneffervescent, few fine sand lenses at base, abrust boundar.	1.
200- 265 GL (79-104)	rellowish brown (10YR5/8) medium sand, single grain, noneffervescent, gradual boundar.	ú. Vi
265- 490 U/DL (104-153)	<pre>gravish brown (2.5/5/2) to light brownish grav (2.5/6/2) medium to coarse sand, single grain, noneffervescent, indeterminate boundary.</pre>	<u>ப்</u> மீ
490675+U/DU (193-266)	eralish brown (2.5%5/2) to light brownish eral (2.5%6/2) coarselver, coarse sand and Pebbles, slight, effectescent, refuse).	MS.

BLC-5

Master core number: 540
Location: GW.SM.SE.Sec.35.T17N.K13W. Cass Country
Landscape Position: Rug Island channel
SCS mapped soil: Tice silt, clay loan
Cored to: DSL. an (434ft.)
Described by: DSL

Deeth om Soil Horizon (in.) or Zone	Description	Unified Soil
0- 120 SÜLUM (0- 47)	heav, silt loam, clear boundar,	Ę
120- 226 MDL (47- 89)	gravish brown (2.575/2) to light brownish grav (2.576/2) silt, with common medium vellowish brown (10765/8) mottles, weal coarse subangular blocks, noneffervescent, few sand lenses toward bases abrupt boundars.	Ę
226- 366+0L (-89-142)	vellowish brown (10985/6) medium to coarse sand, single grain, noneffervescent, refusal,	d, SP

		Unified Soil	ű,	Sh Sh Uni Uni Trueta		98 .:1	ile Sete	MS pue:
	Master core number: 542 Location: 544.544.5ec.35.TI7N.RI344. Cass Count. Landscape position: relict Illinois River natural levee 505 mapped soil: Dickenson fine sand: loam Elevation: 153.2m (457ft.) Cored b.: DSL. JEC	Description	fine sand, loam, clear boundar,	light clive brown (2.5Y5/4) and brown to dark brown (10YR4/2), and darf rellowish brown (10YK4/4) medium to fine sand, darf vellowish brown (10/Y/K4/4) very fine sand, loam and grainsh brown (2.5/Y5/2) silt, vellowish brown (10YR5/6) Fe lenses throughout, weak coarse subarenlar block, to massive, nonefervescent, streta	ranse from 1-15cm. (hickness, silts erimant) r toward base in thin lenses, clear boundars.	dart rellowish brown (10984/4) medium sand. sinsle stain, noneffervescent, stadual boundari.	light olive brown (2.5Y5/4) medium sand, sinsle- grain, ver, slightly effervescent, indeterminate boundary.	gravish brown (2.575/2) coarse, ver, coarse sand and few pebblos, single grain, very slightly effervescent, refusal.
DLC-7	Master Cold number: 542 Location: SW-SW-SW-Sec.35. Landscape Position: relict 503 mapped soil: Dichenson Elevation: 133.2m (437ft.) Cored bi: DSL, JEC Described bi: DSL	Depth on Soil Horizon	0- 100 SOLUM (- 6- 39)	100- 340 O/DL (39-134)		340+ 430 OL (134-169)	430-570 0/BU (169-224)	570
		Unified Soil	ษ	g.	ñ T	as a	된	30
	Master core number: 541 Location: 5E:5E:5M:5ec.35;II7N:KI3W. Cass County Landscape position: relict []linois River natural levee 5C5 maperd soil: Ambraw clar loam Elevation: 132:3M (454ft.) Cored by: [5L. CCD	Unit Description	clas loam to silts clay, abrust boundars	erainsh brown (2.595/2) medium to coarse sand, stratified with 2.596/2 silt, silts with common medium darl rellowish brown (10964/6) mottles, single grain and massive noneffervescent, clear boundari.	rellowish brown (104K5/6) fine to medium sand. single grain, noneffervescent, indeterminate	Tooming the program (2.5V5/4) medium sand, sinale and a considerate programme to the progra	dark era: (5/4/1) silt, massive, noneffervescent, few pebbles and sand mixed possibly due to	auserins, indererminate boondary. 119ht brownish øra, (2.5%6/2) coarse,very coarse sand and Pebbles, single grain, noneffervescent, refosal,
	: 541 4.5ec.35.T17 4. relict II Ambrew clev (454ft.)	1200	clar loam	erations of seconds of	A TOTAL OF STATE OF S	Trent ell	dark gran	light brosend
PLC - c	Master core number: 541 Location: 5E:5E:5W.Sec.35.TI7N.RI3W. Landscape posttion: relict Illinois 6 505 maped soil: Ambrau clav loam Elevation: 130.3m (454ft.) Cored bir fish, CCD Locatibed bir DSL	Desth on Soal Horazon (in.) or Zone	0- 164 SOLUM	164- 235 MDL (-65- 93)	235-380 0L (-93-150)	350- 660 0/DL	con-790 UL (2c0-311)	790- 640+UL (311-331)

Cherth an Soil Monison Vin.) of Zone (0-113 SoilUN time leamy sand, clear be (0-44) (113-126 CL dar) vellowish brown (10) (44-50) (50-50) (50-50) (50-50) (50-50) (50-50) (50-50) (50-50) (50-50) (50-112) (50-50) (50-112) (50-50) (50-112) (60-112) (6	United Scill the state of the s	Described by Edwin R. Hause, 7-9-84
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indeterminant boundar Surface archeologic none Depth on Soil Horizon Naster core number: of Zone 460- 540+0/Du Ą <u>...</u> 79 BZ 3 210 C 83) 315-330 00 330- 460 OL 210-315 (83-124) a in 31) 79- 108 (31- 43) (124 - 130)(130-181) (181-213) (10.) -23 -5 108-+ 43-99 Unitied Soil Classification Locations SW SW SW SW SP 125 117 117 N SW SW Co. t. Cott. cott of proof telephone pole sait of direct to CLOS and 10 for the north of Hone. Fourt road Landscape positions for north of wards broad road. 3 a, ů, (i) ů. Vi ů, gá <u>بن</u> آن ij j. ů. <u>ب</u> (زرا granish brown (2.995/2) silts class and classinaes originally stratified, nonefferverdent, indeterminant over, dark brown (1009FD/2) fane sand, loam, ver, eral fane erandlan, ver, framble, noneffervessent, dark rellows-h brown (109KE24) mottles, weak subenguler block,, ver, fraels, (2.5V5/4) and dark rellowish brown (10VK4/6 and 10VK4/4) fine sand, few olive bra. (2.5V5/2) coarse wilt laminar, nonetherversent. dark brown (10982/2) fine sand. loam, ver, brown (10YR3/3) fine sand, loam, with man, sellowish brown (10YK3/4) fine sand, loams dart .ellowish brown (10YR3/6) fine sand, loam, dark sellowsch brown (10983)6) fine sand, loams single grain, loose, noneffervescent, derk vellowish brown (10YR4/4) fine sand and noneffervescent, common dark brown (10YR3/3) coats on med faces, gradoal boundar.. strongly effervescent, two grainsh brown (2. 5/5/2) silt laminae, indeterminent boundar .. olive brown (2,5Y4/4) and light clive brown dark sellowish brown (10984/4) fine sands dart sellowish brown (10984/4) fine sand, nonettervescent, indeterminant houndars. west medium subangular blockin friables Front sorted Pebili, sand, no fectives. weak medium subangulan blockin friable. SCS mapped soils Dicterson tine sand, loan Elevations 182,3m, (4944), s fored bit David S. Leigh and Julia E. Clieton, 11-30-63 Lescribed bit Edwin E. Haile: 7-5-34 noneffervescent, gradual boundar.. noneffervercent, gradual boundary. Description undelerminant boundar.. indeterminant bounder .. clear boundars. treundar... ¥10m +15+ Surface archeologic none Master done numbert 545 Depth on Sout Horizon of Zone () () 3 ŭ. 270- 350 0L (106-138) 390- 5c0 OU 3 ţ 135~ 270 GL (-53~106) 350 - 390 OF 0 C K 1000 1000 1000 77 **ာ** 83 . (154-220) 3 (188-154) 1.18. 57-83

Unified Soil Classification Location: SE.SM.SW.Soc.ES.T17N.K13W. Cass (o., 16ft, mest of 5th telephone role east of disch to DECH2 and on north side of read Landscape Position: on done seare <u>ن</u> رق <u>ن</u> زن ب ių V (L.) ů, vô ŭ, <u>ن</u> (آر) dark sellowish brown (10YKS/4) and olive brown (2. effervescent, three thick laminae of dark grailsh brown (2.574/2) and dark brown to strong brown (7. dark vellowish brown (109R8/4) and dark rellowish brown (109R8/6) fine sand, noneffervescent, (10)%A4/4) fine sand with moderate laminae of fine sand, loam and loam, fine sand, stratified, dart vellowish brown (1998)/A) loam, fine sand, ver, weat medium subangular block,, ver, frisble, noneffervescent, clear boundars. vers weak medium subangular blocks, vers friable ver, dark brown (10YR2/2) loams fine sands ver, darf rellowish brown (10YR3/4) loam, fine sand, brown (10YR5/6) fine sand, single grain, loose, amond detworks. dark hellowish brown (10YR4/6) and lellowish fine subangular blocks, very frombles dark sellowish brown (10484/6) fine sands 584/4) fine sand, slightly to strongly noneffervescent, very abrupt boundar.. noneffervescent, ver, abrupt boundar,. noneffervescent, ver, abruet boundar,, SYR4/4) coarse sult and sult, refusal. SCS mapped soils Dicterison fine sand, loam Elevations 182.9m, (486ft.) Cored bis David S. Leigh and Julia E. Clifton, 11-30-83 Described bis Edwin E. Halls, 7-9-84 noneffervescent, gradual boundari. noneffervescent, stadual boundars. Description dark brown (7.5YR3/4) and dark

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DEC-12 Master Core number	Master core number: 547		222- 280 VICE1	dark yellowish brown (10984/4) fine sand, with	nd, with SP	<u> </u>
Location: SE.SW.SW.Sec. and due north of sec. maleochannel to east		Foint rd.	(B7-110)	few braktsh brown (1.570/2) tine said, silf an silt laminasi laminated unit, noneffervencent, ver, abrupt boundari.	esit and Vescenti	
Landsdape Position: mids palecontained to east Surface archeologia nore SCS marred soil: Dicters Elevation: 132,3m. (434F)	Landstable Position: midslope from hish sand, area to west and narrow maleschance to exist and narrow baleschance for an exist and farrow SCS marred soils Dicterson fine sand. Town to Moopeston sands loam Elevation: 132,38, (434ft.)		280- 322 by (110-127)	laminated olive brown (2,504/4) very fine sand and silt and graits brown (2,505/5/2) silt and coarse silt, slightly to strongly effervescenty abrupt boundery.	are send Mi Sit and coarse to abrupt	
Cored by: David S. Described by: Edwi	Cored by: Devid 5. Leien and Julia E. Cifton, 12-1-09 Described by: Edwin & Haulo, 7-9-84		322- 385 UU (127-152)	dark olive eray (5Y3/2) and very dark era- (5Y3/1) and olive eray (5Y4/2) very fine s	era. ne sand.	_
Depth on Soil Horizon (in.) or Zone	Exective C	Unified Soil		will and coarse will, arrows!! Ambinated. #libit! Y to strongly effervescent. Common laminace of very fine uncarbonized organic matter. ver- #brust boundary.	ens. Bool lestines ens. Vens	
0- 24 A1 0- 9)	very dark brown (10YRZ/2) fine sand, loam, weat fine subangular block, friable, noneffervescent, clear boundary.	g.	385- 480 DU (152-189)	dark gravish brown (2,574/2) fine sand, with some coarse sand and very few rea-sized rethies, violently effervescent, unknown lower boundary.	, with some SP bles. boundary.	ů.
24- 43 B1 (9- 17)	very dark snavish brown (10VRS/2) loam, weak medium subansular blocky, friable, noneffervescent, few Fe nodules, sradual boundar	뒫				
43- 81 B2 (17-32)	dark brown (10VR3/3) fine sand/ loam, weak medium erismatic, friable, noneffervescent, common Fe nodules, eradual boundary.	a a				
61 - 90 B3 (32 - 35)	dark brown (10VR3/3) fine sandy loam, with common fine dark vellouish brown (10VR3/6) Fe mottles, weak medium subangular blocky, very friable, noneffervescent, clear boundary.	û. V)	ULC-13 Master core number: Location: SW-SE-SW- Landscape Position:	re number: 548 SW-SE.SW-Sec.25-IIZN-RISW. Cass County Position: bug Island channel		
90125-1101 (-3549)	olive brown (2.574/6) and dark vellowish brown (109R3/6) fine sand, single grain, loose, noneffervescent, abrupt boundary.	95 3-	SCS mapped soil: Beaucoup Elevation: 131.1m (430ft.) Cored by: DSL, UEC Described by: DSL	SCS mapped soil: Beaucoup silty clay loam Elevation: 131.1m (430ft.) Cored by: DSL, UEC Described by: DSL		
125- 149 111C2 (49- 59)	dark vellowish brown (10VR3/4) fine sand, loam and one thin bed of gravish brown (2.5V5/2) siltvelar and int 13 moderately laminated, siltvelar between the brown (10VR4/6) Fe mottles, noneffervescent, abrunt boundary.	ą.	Depth on Soil Horizon (in.) or Zone (Zon Description Pilty clay loam, clear boundary	Unified Sail Classification	G 4 1
145- 178 IVBID (59- 70)	olive (5Y5/3) silty clay, with man, fine dark yellowish brown (10YR3/6) and dark yellowish brown (10YR4/6) mottles, few Mn mottles, weak fine plater, to weak medium subangular blocky, film, nonefervescent, few very dark bra, (5Y3/1) thin to moderately thick coats in pores, clear boundary.	ರ	(0- 79) 200- 240+0/DU (79- 94)	light olive brown (2.575/4) fine sand, vern slightly effervescent, refusal.		
178- 222 VB2b1 (70- 87)	brown to dark brown (7.5VR4/4) and ollive (5VS/3) clay loam, few dark hellowish brown (10VR4/4) recells sorted sand laminae at base, few rebbles throughout unit, with few medium and fine dark hellowish brown (10VR4/5) mottles, weal medium subangular blocks, firm, noneffervescent, few dark bran (5V4/1) thin to moderatel, this coats in pores, abrupt boundars.	IJ				

T T T T T T T T T T T T T T T T T T T	36ft.) 19h and Julia E. (lifton, 12-1-63 . Jaire, 7-9-84	(100°)
vin.) or Zone	Description	Unitied Soil Classification
0- 23 AP 0- 9)	black (10VK2/1) fine sand, loan, weat fine granular, friable, noneffervescent, abrupt boundary.	ů v
23- 40 B1 9- 16)	mottled very derk brown (109KE/2) and dark vellowish brown (109KE/4) fine sand: loam, with man, fine dark cellowish brown (109KE/6) and dark vellowish brown (109KE/6) and dark vellowish brown (109KE/6) Fe mottles, weak fine subangular blocky, friable, nonetfervescent, clear boundary.	O. 45
40- 70 H2 16- 28)	dark vellowish brown (109R4.4) loam, with mana- fine dark vellowish brown (109R3/6) and dark vellowish brown (109R4/6) mottles, weak medium subansular blocks, friable, noneffervescent, verv few thin very dark aravish brown (109R3/2) coats in pores, clear boundari.	불
70- 94 B3 28- 37)	rellowish brown (10YR5/4) fine sandy loam, with many fine derbound brown (10YR3/6) and dark yellowish brown (10YR4/6) Fe mottles, weak coarse subensular blocky, friable, noneffervescent, clear boundars.	a a
94129-C1(0L) 3751)	vellowish brown (10VR5/4) loamy fine sand and fine sand, with common medium dark vellowish brown (10VR4/6) and vellowish brown (10VR5/6) mortles, very friable to single grain loose, nonetfervescent, very abrupt boundary.	ο. σ
129- 207 OL 51- 61)	dark vellowish brown (10VR3/4) and dark vellowish brown (10VR3/6) fine sand, noneffervescent, few laminae of medium sand, two laminae in lower half of brown (10VR5/3) silts class abrown bounders.	ġ. Ø
207- 255 0/DL 8.1-100)	gravish brown (2.595/2) and gravish brown (2.585/3) silt and silty class and dark sellowish brown very fine and fine sand, strongly laminated, noneffervescent, fine sand from 239-253cm, one thin clive (574/4) laminae, vers abrupt boundary.	ರ
255- 290 OL 1100-114)	dart vellowish brown (10VR3/4) fine sand, nonetfervescent, indeterminant boundars.	Ç.
290 480+hij (114-189)	gravish brown (2.575/2) time sand, slightly to strongly effectent, one dart gravish brown (2, 574/2) sandy silt laminae at about $450\mathrm{cm}$.	85

BLC - . 5

こうこのかまからくをからからない こうこれからこうか ちかしき マルコ・ドゥッか かっちゅう	(10VE4.4) coate on med taces, more lie, than
--	--

1 0	ij,	Ġ.
dark Lellustsh brown (10VKS/4) fine sand, claudark on, noneffervescent, indeterminant boundary.	ourliellowish brown (10VK3/6) and dark vellowish brown (10VK5/4) fine sand, noneffervescent, indeterminant boundary.	dark hellowish brown (10YK3/4) and dark bro n (10YK3/3) fine sand, noneffervescent, approximately upper one half of a 1t has very low silt fraction, indeterminant b undary.
306- 324 11C162 (120-123)	324-480 INC262 (128-189)	200 SSO OL (18 -217)

[4.7]

Marter forte funder: 551 Location: National Marsec. 50 Location: Salation for the forter for the forter forter forter forter for marter for marter forter fo	Maiter fore number: 551 Location Flatibility MESSACO (1704-K15M), Cass Co., 16ft, south of Hone, forestern Flatibility Messaco (27) (1704-K15M), Cass Co., 16ft, south of Hone, forestern existence of Eath (17) Terrace scarp Surface at the location of the of Eath (17) Terrace scarp (20) forestern forestern forestern forestern (18) Terrace at the location of Flatibility (17) forestern (18) Flatibility (19) forestern (18) forestern (18) forestern (18) forestern (19) forestern (18) forestern (19) fore	Pount	Master Core number: 552 Location; NW.SE.NE.Sec.30,117N, Landscare Position: Indian Cree 5CS mapped soil: Sawnill silt: Elevation: 135.3m (444ft.) Cored by: DSL, JEC Described by: DSL	DLC-17 Master core number: 552 Location: Mw.SE.NE.Sec.30,117N.R12W, Cass Count. Location: Mw.SE.NE.Sec.30,117N.R12W, Cass Count. SCS mareed soil: Sawmill silt; cla. loam Elevation: 135.3m (444ft.) Cored by: DSL, JEC	• 1 e.	
HTD ON Soll Herizon	Description	Unified Soil Classification	Depth on Soil Horizon (in.) or Zone	zon. Description	Unified Son Classification	d Sea cation
0 30 H1	ver, dar) brown (1017,/2) loam, fine sand, ver, sast fine rlate, ver, friable, noneffervescent, clear bound r.,	ñ.	0- 120 SOLUM (0- 47)	salt loam to fane sand, loam at base, boundary.	(d)) (d	률 :
32114 € (-1545)	dart .el .wish brown (10VKS/4) fine sand, single e ain, loose, noneffervescent, abrupt boundar	ą,	120- 298 MDL (47-117)	scarst brown (2.575/2) time sand and light brown- ish srav (2.576/2) silt, strainfied with 5-10cm, thick alternating beds of silt and sand, silts are laminated, silts with common medium light	l light brown- dith 5-loum. Ind. silts um light	É
114- 183 IIFIE (-48- 51)	sick rellowish brown (10983/4) fine sandy loam, moderate medium subangular blocks, friable,	u. ij		olive brown (2.5Y5/6) mottles, noneff clear boundary.	ervescent,	
	Construction to the control of the c		298- 580 DL (117-228)	light brownish gras (2.576/2) to light vellowish brown (2.576/4) medium sands single grain, noneffervescent, indeterminate boundars.	of vellowish arain, ara.	ę.
150 1162b (52 61)	derl lellowish brown (100K3/4) fine sind, loam, miderate coarse prismatic, friable normetfervescent, many dark lellowish brown into Mally coats on each since more claim that	<u>a</u> 07	580- 625 UL (228-246)	dark snar (SY4/1) pebbly sand: loam, very poorl, sorted, noneffervescent, indeterminate boundari.	very Poor). te boundary.	3 0
1	attored of the foundation of the form of t	a	625- 780 UU (246-307)	enaxish brown (2.595/2) to light brownish era; (2.596/2) medium sand, single erain, ver; slightly effervescent, indeterminate boundars.	onish aras Vers bequidant.	ů. W
1561 (75 - 1836) (51 - 76)	dar) sellowish from (1978-26) time same income moderate coars subangular blocks) frasher incorts a second, common dark sellowsh brown (1078-3) thin coats on red faces, clas contents contact to IIBzb, clear boundars.		780840+UU (307-331)	olive (5Y5/3) coarse, very coarse sand and mebbles, very slightly effervescent, refusal	id and refusal.	33 V)
193- 243 11161b (-76- 93)	troun to dark brown (100KA/3) and brown (100K5/3) and dark telliouish brown (100k3/6) loam, fine sand to loam, weak medium subangular block, friable, noneffervescent, originall, stratified unit, clear boundary.	es es				
248-280 IVC26(DL) (-68-110)	light vellowish brown (2,546/4) fine sand, indeterminant boundars.	ŭ ŭ				
280-510 OL (110-201)	dark sellowish brown (1008/304) and dark sellowish brown (1008/474) fine sand, noneffervescent, indeferminant boundary.	e e				
*(10700+01 (101-275)	door religuous brown (109R3/4) and dark vellowish brown. LowR4/4) poorly sorted fine to coarse sand reto oil.	NS 4,				

DLC-18			DLC-19		
Master core number: 553 Location: NE.St.NW.Sec.30.117N.KIZN Landscare rosition: Indian Creek Fi SCS marred soil: Comfree clay loam Elevation: 135.3m (444ft.) Cored by: DSL. JEC	Master core number: 553 Location: NE.St.NW.Sec.30.Ti7N.KIZW. Cass County Landscare resition: Indian Creek Floodplain in Illinois valley SCS marred soil: Comfre. clay loam Elevation: 135.3m (444ft.) Cored by: DSL. JEC		Master Core number: 554 Location: Ne.NW.SE.Sec.29.TI7N.K12W. Landscape Position: Indian Creek floc SCS mapped soil: Sparta loam: sand Elevation: 136.6m (448ft.) Cored by: DSL. JEC	e number: 554 NE.NW-SE.Sec.Z9.T17N-R12W. Cass County Position: Indian Creek floodelain in Illinois valler i soil: Sparta loam: sand 136.6m (448ft.) DSL. JEC	
Depth on Soil Horizon (in.) or Zone	Description	ţ	Derth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification
0- 70 SPOIL (0- 28)	clear boundary	נר		silt to sand, silt loam at base, clear boundary	륃
70- 163 SOLUM (28- 72)	clar loam to sandy clar loam at base, clear boundary.	๋	165- 203 BC (65- 80)	light olive brown (2.575/4) sands loam, with common medium light olive brown (2.575/6) mottless mediane substantias that a	d.
	gravish brown (109KS/2) sandy loam, with common	ξ		Boderaie Collae adoption of control noneffercescent Chear Doundary.	
(72- 83)	medium dark velicener brown (10784/6) mottiens, moderate medium subargular blocks, moreffervencent, class boundars.	•	203- 300 C(GL) 80-118)	light olive brown (2.5%5/6) to olive vellow (2.5%6/6) fine sand, single grain, noneffer-vescent, indeterminate boundary.	S.
210- 510 C(OL) (-83-201)	light olive brown (2.575/4) to rellowish brown (10985/8) fine sand, single grain, noneffervescent, indeterminate boundary.	SF	300- 480 O/DL (118-189)	light olive brown (2.5V5/4) medium sand, noneffervescent, indeterminate boundary.	ď
510- 570 UL (201-224)	<pre>sravish brown (2.5%5/2) to light brownish srav (2.5%6/2) fine sand to medium sand, sinsle srain noneffervescent, indeterminate boundary.</pre>	ds.	480- 600 D/UL (189-236)	light brownish grav (2.5%/2) charse, very quarse sand, single grain, noneffervescent, very few pebbles, indeterminate boundary.	M.
570- 565 UL (224-230)	dark gray (SY4/1) fine sandy loam, noneffervescent, indeterminate boundary.	SP	600- 760+D/UU (236-299)	olive brown (2.574/4) coarse and very coarse sand, single grain, strongly effervescent, refusal,	W. S.W.
585- 610 DL (230-240)	light olive brown (2.5%5/4) fine to medium sand, single Brain, noneffervescent, indeterminate boundary.	<u>ن</u> ن			
610- 790 0/DL (240-311)	light vellowish brown (2.576/4) fine to medium sand, single grain, noneffervescent, indeterminate boundary.	ς).			
790- 870 UU (311-343)	<pre>gravish trown (2.5%5/2) medium sand, single grain, verv slightly effervescent, indeterminate toundary.</pre>	g,			
670- 920 UU (343-362)	<pre>gravish brown (2.5Y5/2) coarse, Very coarse sand and mebbles, slightly effervescent, indeterminate boundary.</pre>	MS			
920- 930+U/DIJ (362-366)	light olive brown (2.595/4) to light vellowish brown (2.596/4) coarse, very coarse sand and mebbles, very slightly effervescent, refusal.	3			

Depth ca Soil Horizon (in.) or Zone	ish and Julia E. Clifton, 12-5-83 . Haile, 8-12-84 . Description Cl	Unified Soil assification
0- 20 C 0- 8)	ditch specil, very abrupt boundary	로
20~ 48 A1 (8~ 19)	very dark brown (10VK2/2) loam, weat fine granular, friable, noneffervescent, abrupt boundary.	된
48- 79 B1 (19-31)	dark yrav (10VR4.5/1) loam to clav loam, weak fine subangular blockv, friable, noneffervescent, clear boundarv.	Ę
79- 129 B2t (31- 51)	<pre>#ravish brown (2.5%5/2) heavy loam, continuous dark yellowish brown (10%6/6) Fe mottles, weak medium prismatic, friable, noneffervescent, continuous #ravish brown (10%5/2) clay coats on ped faces and in pores, clear boundary.</pre>	₹ Suc
129- 151 B3 (51- 59)	prayish brown (2.5%5/2) fine sandy loam, with many fine dark vellowish brown (10%8/6) Fe mottles and with common medium dark prayish brown (2.5%4/2) mottles, weak coarse subangular blocky, friable, noneffervescent, few Fe nodules, clear boundary.	₫.
151- 180 C(DL) (59- 71)	olive brown (2.5Y4/3) loamy fine sand, noneffervescent, gradual boundary.	g.
180- 480+DL	olive brown (2.5%4.5/3) fine sand, noneffervescent, one risk lamination at 4 (orm, refusa).	ů. ÚŽ

Master core number: 556-22 location: SE.SW.SE.Sec.22 intersection of Hone: Flandscape position: loca Surface archeology. Surface archeology. SCS massed soil: Rad loca SCS massed soil: Rad location: 134.1m. (440F) Cored by: David S. Leish Described by: Eduin R. H.	Master core number: 556 Location: SE.SW-SE.Sec.25.117.KI3W, Cass Co., in the field corner of the intersection of Hone. Point rd. and Indian Creek rd. Landscape position: local floodplain of Indian Creel paleochannel Surface archeolos: none SCS masped soil: Raddle silt loam Elevation: 134.in. (440ft.) Cored by: David 5. Leish and Julia E. Clifton, 12-5-83 Described by: Eduin R. Halic, 8-12-84	700- 720+ 0IJ (276-283)	dark vellowish brown (10VRS/4) medium sand, fair SP sorting, common very fine and fine pebbles, violently effervescent, refusal,	<u></u>
Depth ca Soil Horizon (16.) of 20ne	Unified Soil Description Classification	soil ation		
0 34 AP (0-13)	black (10YR2/1) silt loam, weak verr fine eranular, friable, noneffervescent, abruet boundary.	ML DLC-22 Master core numbers Locations NW:NW:NW:	DLC-22 Master core numbers 557 Locations NW.NW.NW.NW.Sec.31,T17N.R13W. Cass Co., in the field corner of the	ě
34 61 A1 (13- 24)	very dark brown (10YR2/2) silt loam, weak fine granular, ver, friable, noneffervescent, clear boundary.	intersection of Honey F Landscape mosition: Bluf Surface archeologis none SCS mapped soil: Wateska	intersection of Money Point rd. and Mwy. 100 Landscape mostition: Bluffs Terrace Surface archeology: none SUS mapped soil: Wateska loams sand	
61- 80 A20RB1 (24- 31)	pravish brown (10YR5/2) silt loam, weak fine subangular blocky, very friable, noneffervescent, common fine very dark brown (10YR2/2) concretions (?), abrupt boundary.	Elevation: 134 Cored by: Davi Described by:	Elevation: 134,4m. (441ft.) Cored by: Devid S. Leish and Julia E. Clifton. 12-8-64 Described by: Edwin R. Hajic. 8-12-84	
80- 146 B2 (31- 57)	brown to dark brown (10VR4/3) silt loam, weak medium prismatic, friable, noneffervescent,	ML Depth cm Soil Horizon (in.) or Zone	Unified So one Description Classificati	d So
	Patchy very dark gravish brown (10983/2) and very dark brown (10982/2) clay coats on Ped Saces and Pores and Fine concretions, gradual boundary.	0- 204 OL (0- 80)	pale brown (10YR6/3) loams fine sand to fine sand. SP with common medium dark yellouish brown (10YR4/6)	g.
146- 207 B3t (57- 81)	brown to dark brown (109R4/3) silt loam, with many fine dark yellowish brown (109R4/6) and dark	¥	montres, west substanted biology to studie wists. loose, noneffertescent, clear boundary.	
	vellowish brown (10VR3/6) Fe mottles, weak coarse prismatic, framble, noneffervescent, many thick, very dark grayish brown (10VR3/2) and very dark brown (10VR3/2) clay coats on ped faces and pores, clear boundary.	204- 378 OL (80-149)	dark vellowish brown (10YR4/4) and dark vellowish SP brown (10YR5/4) fine sand (with some silt), noneffervescent, rare very fine mebbles, one small miece of charcoal, abrupt boundar	<u>%</u>
207- 270 C(MOL) (81-106)	eravish brown (10VR5/2) silt loam high in sand content, with many fine dark vellowish brown	378- 510 DU (149-201)	light olive brown (2.5V5/4) fine sand, strong to SP violently effervescent, clear boundary.	<u>a</u>
	(10VR4/6) and dark vellowish brown (10VR3/6) Fe mottles: noneffervescent, weakl, stratified, indeterminant boundary.	510- 630 DU (201-248)	lisht olive brown (2.5%%) medium silt, moderate SP sorting, common very fine pebbles, strong to violently effervescent, clear boundar.	ů,
270- 470 O/DL (106-185)	dark vellowish brown (10VR3/4) and dark vellowish brown (10VR4/4) and dark vellowish brown (10VR4/6) fine and medium sand, stratified with common strayish brown (10VR3/2) and (2.5Y5/2) silt and coarse silt thickly laminated, noneffervescent, indeterminant boundary.	SP 630-720+DU (248-283)	light olive brown (2.5%5/4) medium and coarse sand, poorly sorted, common very fine to medium. Pebbles, slightly to strongly effervescent, one piece of charcoal, refusal.	<u>a.</u>
470- 640 DU (185-252)	dark prayish brown (10YR4/2) medium sand, few very fine pebbles, slightly to strongl, effervescent, indeterminant boundary.	g.		
640- 700 DU (252-276)	dark praxish brown (10VK4/2) medium sand, fair sorting, common ver, fine and fine petbles, violently effervescent, indeterminant boundar	SF		

Unified Soil Classification

DLC-23 Master core number: 558 Location: NE.NE.Sec.1.T16N.R13W, Landscape Position: Eluffs terrace 5CS mapred 5011: Watseta loam: sand Cored by: DSL. JEC Described by: DSL	DLC-23 Master core number: 558 Location: NE.NE.Sec.1.T16N.R13W, Morean County Landscher Position: Blorfs refrace (?) 5CS marred soil: Watseka loam: sand Elevation: 134.7m (442ft.) Cored by: DSL UEC Described by: DSL		Place to core number: 559-50-13 location: NW.NW.SE.Sec.13 lerrace scare on C. Win Landscape position: local Surface archeolog: none 500 mapped soil: Derunn: Elevation: 132, 3m. 143444. Cored by: David S. Leigh Described by: Eduin R. H.	Must ricore number: 559 Location: NW.NW.SE.Sec.19.TIZN.RIEW. Cass Co., 120ff.east of fenceline atomiterace scarp on C. Winhleman site) droad Landscape position: local bottoms rust east of fluifes?) Terrace scarp Surface archeologic none Surface archeologic none Surface archeologic none Sold mapped soil: Derum silt, cla. Gord bi: East non 132,3m (434ft.) Cored bi: East of S. Leish and Julia E. Clifton, 12-8-83 Described bi: Edwin R. Hairo, 7-6-84	celline ator
Depth cm Soal Horazon (an.) or Zone	Description	Unified Soil Classification	Soil fropth on Soil Horizon ation (10.2 or lone	Description	Unified Soil Classification
0- 104 SOLUM (0- 41)	fine sandr loam, clear boundary		SP 0- 13 (1) (0- 5)	ver, dark srajish brown (109K3/2) and darl brown (109K3/3) loamy fine sand, ver, weak medium	umo
104- 167 C(MOL) (41- 66)	stratified pravish brown (109K5/2) sandr clav loam, with many medium dark vellowish brown (109K4/6) mottles, and 2,594/3 medium sand, s clay loam has weak, coarse subangular blocky.	y b n e	SP 13- 40 Arb 7- 5- 16.)	<pre>stanular, very friable, noneffervescent, scoll, ver, abruet boundary. very dark brown (109KE/L) silt loav and with high sand content, moderate from crawler, friable.</pre>	1, nish ML
		clar loam ch strata , clear	40- 5× A3b (16-23)	noneffervescent, ver, abrupt boundar, black (10YR2/1) silt, clay loam, moderate fine subsigular blocks, friable, noneffervescent,	
167- 210 CL (66- 83)	olive brown (2.5Y4/4) loamy sand, with common larse dark vellowish brown (10YR4/4) mottles, weak very coarse subansular block,, noneffervescent, base of zone marked by pebble lens, abruet boundary.	au.	SP 59- 85 Mobe (23-33)	cled Doundair. ver, dail grac (10YRS/1) silts class moderate medium Prismatics firms noneffervescents gradual toundars.	ua) CL
210- 400 DL (83-157)	<pre>gravish brown (2.5Y5/2) medium sand, single grain, noneffervescent, indeterminate boundary.</pre>		85-139 B22be (33-55)	dark grayish brown (2.594/2) silty claiv, with few fine dark vellowish brown (10983/6) Fe mottles, weak medium prismatic breaking to weak medium angular	few CL s. weak lar
400- 480+D/UL (157-189)	dark prayish brown (2.5944/2) coarse, very coarse sand, and pebbles, noneffervescent, numerous pebbles preater than 1.0cm. B diam., refusal,	ب ب ب	A.S.	blocky, firm, noneffervescent, common ver, dark grav (109K3/1) coats on Ped faces and Fores, two ver, dark grav (109K3/1) silt, clar krotovina, gradual boundary.	د ون د ون
			139- 195 B3bs (55- 77)	olive grav (5Y5/2) silt, clav loam, with many fine dark vellowish brown (10YR2/5) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, common very dark grav (10YR3/1) and (10YR4/1) coats on red faces and pores, few fine and medium roots, indeterminant boundary.	CL nt. dium
			195- 247 IIC(UL) (77- 97)	clive grav (5Y5/2) silt with thin veds and thick laminas of dark olive grav (5,3/2) and olive grav (5,3/2) and olive grav (5,4/2) fine sand noneffervescent, sand zone at 202-208 has subangular to subrounded igneous and chert pebbles, this zone may actually represent top of unit, very abrupt boundary.	and
			247- 259 UL (97-102)	dark stailsh brown (2.574/2) and dark ollive stail (573/2) fine sand, noneffervescent, indeterminant boundary.	rav SP nant
			250- 460 UL (102-181)	dark smallsh brown (2.5744/2) medium and coarse sands no recovery, indeterminant boundary.	ند (ر) بد

ij,

dark vellowish brown (10VR4/4) fine and medium sand, strongly effervescent, refusal.

460- 460+00 (181-169)

Master core number: 560
Location: SE. SE. NE. Sec. 24, T17N. R13W. Cass Co., 25ft. northwest of last fence
post or conthisting feace time or first or first
Landscape position: eastern most edge of Bluffs Terrace remaint
Surface archeclosks none (snow cover)
SOS marred soil: Dickerson fine sand, loan
Elevation: 134.7m. (442ft.)
Cored by: David S. Leish and Julia E. Clifton, 12-8-84
Described by: Edwin R. Hajio, 7-8-84

(10.)	-	(1n.) or Zone	Description Class	assification
99	27	ប	ver, dark brown (10YR2/2) silt loam, high in verv fine sand content, weakly stratified, strata are massive, friable, noneffervescent, spoil, abrupt boundary.	튁
(11-19)	47	47 A1b 9)	<pre>very dark brown (10VR2/2) silt loam, weak fine granular, ver, friable, noneffervescent, clear boundary.</pre>	로
47-	30.3	B1 b	dark brown (10YR3/3) silt loam, weak medium subangular blocks, vers friable, noneffervescent, gradual boundars,	된
36-	107	B2b	dark vellowish brown (10YR3/4) silt loam. moderate medium subangular blocks, friable, noneffervescent, few fine sand coats on ped faces and in pores, gradual boundary.	뒫
107-	123 48)	ВЗЬ	dark vellowish brown (109K3/6) fine sandy loam, weak medium subansular block,, very friable, noneffervescent, clear boundar,	e.
123-) (46- 9	146 57)	11C16(OL)	dark vellowish brown (10YR4/6) very fine and fine sand, single grain, loose, noneffervescent, abrupt boundary.	Q.
146- 2	240 OL 94)	70	vellowish brown (10VR5/6) very fine and fine sand, noneffervescent, indeterminant boundary.	e e
240- 360 (-94-142)	360	ಕ	dark vellowish brown (10VR4/6) fine sand, noneffervescent, indeterminant boundar.	Ŗ
360- 600 (142-236)	36)	3	dark vellowish brown (109K8/4) and dark vellowish brown (109K8/6) fine sand and medium sand. slightly to strongly effervescent, common gravish brown (2.595/2) thick silt laminae, indeterminant boundary.	ů,
600- 720+0U (236-283)	7204	ō	vellowish brown (10VR5/4) and dark vellowish brown (10VR4/4) fine Sand and medium sand, slightly effervescent, refusal,	5

24.6-20			
Mayter core number: Location: SW:SE:NE:	Master core number: 5cl Location: SW.SE.NE.Sec.24.TIZN.KI3W. Cass Co., 425ft, east of Indian Greek	230- 240 OL Creek (01- 94)	dark relioussh brown (109K4/6) fine sand and medium sand, nonetfervescent, abrupt boundari.
rd, on E. Winkleman s fielf road Landscape positions local low area Surface profesologic noise, snow cove SCS mapping soils Littleton sult los Electrons 114 los	cd. on i. Winkleman s thelt road Landscape position: local local local local local local local contract remnant Society archeologic noise show Cover Society society of introcents and local mapped soils intellection sult loam	240~ 410 0L (94-161)	derf rellowish brown (10VRS/4) to clave brown (2.5V4/4) fane sand and medium sand, very few statish brown (2.5VS/2) silt laminae, one piece of wood at about 275cm., Possibly contamination
Cored by: David S.	tersh and Julia E. Clifton, 12-6-83		from Founding board?, indeterminant boundary.
Described by: Edwin A. Deeth on Soil Horizon		410- 550 DU (161-209) Unified Soil	<pre>granish brown (2.5V5/2) to olive brown (2.5V4/4) fine sand, slightly effervescent, indeterminant boundary.</pre>
in.) or Zone	Description	Classification 530-600+600	dark relicuish brown (10VR3/4) and dark relicuish
0- ZS A1 (0- 11)	black (10VR2/1) silt loam, very few fine dark .ellowish brown (10VR3/6) Fe mottles, moderate fine granular, friable, noneftervescent, few fine sandy poclets, clear boundary.	ML (209-236.)	brown (10%K3/6) tine sand, slishtly effervescent, refusal.
26 - 56 B1 (-11-22)	dark pravish brown (10VR4/2) silt loam, moderate medium subangular blocky, filable, nonefervescent, common black (10VR2/1) thin coats on red faces, few black (10VR2/1) silt loam krotovina, clear boundary.	JF	
5e - 75 B21 (22 - 30)	dark graiish brown (109K4/2) silt loam, with verview tine dart vellowish brown (109K3/6) Fe mottles, moderate medium prismatic, breaking to moderate medium subangular blocky, friable, nonefervescent, one brown forth subangular gravely, few thin voir dark graiish brown (109K3/2) coats on ped faces, discontinuous fine sand on ped faces, clear boundary.	ቸ 1	
75- 130 B224 (30- 52)	dart sea, (10VK4/1) silt loam, with man, fine dart vellowish brown (10VK3/4) and dart vellowish brown (10VK3/4) Fe mottles and with few fine dark sea, ish brown (10VK4/2) mottles, moderate medium accourse prismatic, frable, noneffervescent, continuous dark seavish brown (10VK4/2) thin costs on ped faces and in pores, discontinuous indeterminant boundary.	F Pue	
132- 160 B3 (52- 63)	mottled dark gravish brown (10VR4/2) and dark vellowish brown (10VR3/4) heavy silt loam, with many fine dark vellowish brown (10VR3/6) Fe and Mn mottles, west medium subangular block,, friable, noneffervescent, continuous dark grav (10VR4/1) thin coats in pores, clear boundary.	ام کا الحال ا	
160- 20% TIC (OL) (-63- 62)	dar! rellowish brown (109K3/4) loam to loams tine sand at base, weall, laminated in lower half, weak medium subansular blocks, friable to versitiable, noneffervescent, vers abrupt boundars.	φ.	
203230 UL (-6291)	olive brown (2.574/4) fine sand, brown to dark brown (7.576/4) leam, fine sand, gravish brown (2.575/2) and brown to dark brown (7.576/4) silt, strong), laminated, filable, noneffervescent, ver, about boundar.	ŭ. Vi	

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DLC-27 Master core number:	DLC-27 Master core number: 562 Poster core number: 562	269-368 0/DL		dark vellowish brown (10YR3/4) and dark vellowish brown (10YR3/A) fine to medium eand, fine	٧,
detoni usissing LC-26 on Bluffs deceme mosition			brown trothology this to section which the section will be sent to the section of the section to the section of	brown (activity) water to medical mains think shad, loam attacts and attach aminated, noneffervescent, very abrunt boundary.	
Smarred soil: K. seatton 131.4m.	SCS mapped soil: Raddle silt loam Elevation: 131.4m. (440ft.) Cored by: David S. Leish and Julia E. Clifton: 12-9-83 Described by: Edwin R. Hajic, 7-8-84	365- 420 DU (145-165)		olive brown (2.594/4) fine sand: ver. few graist- brown (2.595/2) silt laminae and one dark graist- brown (2.594/2) silt laminae at base. very slightly effervescent, abrupt boundary.	
Deeth on Soal Morazon (16.) or Zone	Description	420- 540 0U Unified Soi! (165-213)		dark vellowish brown (109KS/6) fine sand, ver, slishtly effervescent, indeterminant boundar,.	
3.0	cam, weak fi	540- 700+? (213-276) ML	fine sand and and med no recovery, nefusal,	fine sand and and medium sand with few stavels: no fecovery, refusal.	
39- 76 B1 15- 30)	very dark gravish brown (10YR3/2) silt loam, moderate fine subangular block,, friatle, noneffervescent, continuous ver, dark brown (10YR2/2) thin coats on ped faces, rare charcoal mottles, gradual boundar.,	로			
76 - 121 622 30~ 48)	dart brown (109K3/3) silt loam, with many fine dark vellowish brown (109K3/6) mottles, moderate medium prismatic, friable, noneffervescent, common very dark pravish brown (109K3/2) thin coats on ped faces, clear boundary.	분			
121- 13¢ B23 (46- 54)	dark sellowish brown (10YR3/4) silt loam, silt loam is high in fine sand, with many fine dark vellowish brown (10YR3/6) mottles, weak medium prismatic, frimble, noneffervescent, clear boundary.	뉟			
136 158- 11B3 54 62)	dark vellowish brown (10VR4/4) sandy loam, with man, medium and fine dark vellowish brown (10VR3/6) Fe mottles, weak medium subansular blocky, very friable, noneffervescent, abrumt boundary.	45 4.			
158- 242 111C1 (62- 95)	dark vellowish brown (109R4/4) silt loam, silt loam is high in fine sand, with many medium graish brown (2.595/2) and dark vellowish brown (1.09R3/6) Fe mottles, massive, very friable, noneffervescent, abrupt boundary.	로			
242- 269 IVC2(OL) 95-106)	dark vellowish brown (10YR3/6) and dark vellowish brown (10YR3/4) dark vellowish brown (10xr4/6) stratified medium sand and loam, fine sand, few laminae of dark vellowish brown (10YR4/6) medium sand and grasish brown (2.5Y5/2) loam, fine sand, nonefervescent, very abrupt boundary.	g.			

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Master core number: Location: SW.SE.NE.9 of C. Minklemans t of Indian Creek rd Landscare rositions Surface archeologis SCS. Maseed soil: Dis	Master core number: 363 Location: SW.SE.NE.Sec.24117N.R13W. Cass Ko., 16ft. south of southwest corner of C. Winklemans how finishing shed at notheast corner of intersection of Indian Creek rd. and Winklemans field road Landscape position: dune on Bath Terrace remnant Surface archeology; none on Bath Terrace remnant Surface archeology; none on Bath Terrace remnant	199- 224 C1b2 (76- 88)	olive brown (2.574/4) fine sand, dark brown (7.5764/4) loam, fine sand, and mottled dark brown (7.5764/4) and dark vellouish brown (10764/4) loam, stratified and laminated, friable to firm, noneffervescent, boundary marked to beavil, exidized corresion zone, ver, atrust boundary.	ä
Elevation: 135.0m. Cored by: David 5. (Described by: Edwin	Elevation: 135.0m. (443ft.) Cored by: Devid S. Leish and Julia E. Slifton, 12-9-83 Described by: Edwin R. Hajic, 7-5-84	224- 240 B3b3 (88- 94)	olive brown (2.574/4) fine sand, lean, with man- fine dark vellowish brown (10984/6) Fe mottles, weal medium subangular block), firm, noneffervessent, many very fine and fine Pores, clear boundar.	ů,
Death om Soul Horizon (1n.) or Zone	On Description Classification	240- 280 C163 (94-110)	dark vellowish brown (10VR4/6) to brown to dark brown (7.5VR4/4) at base, loam, fame sand, few weak	ů,
0- 22 C1 (0- 9)	dark vellowsh brown (10VR3/4) loamy fine sand, SP west and use thouse thouse thouse thouse the same to the same thouse the same same same same same same same sam	137.03 03 W - 1300	Anticon to the design to manage to the following to finally be not effect to the first and the first	3
22- 46 Albi (-9- 18)	very dark gravish brown (10YRS/2) loam, fine sand, SP very weak fine granular, very friable, noneffervescent, clear boundary.	(110-165)	brown to dark groun (7.04842.) sitt and coarse silt, araust brown (2.54642.) silt and coarse silt, dark villouish brown (104824.5/¢ and 4/¢) fine sand loan, fine sand ant fine sand loan, stratified and strongly laminated.	Ę
46- 98 C161 (18- 39)	dark vellowssh brown (109R3,5/6) fine sand, single SP grain, loose, noneffervescent, discontinuous dark		nometralenthian. One redding often (SYN4/4) Claimanines Vers abrupt bounder.	
		418- 520 OL (165-205)	dark vellowish brown (109KS/S) fine sand, noneffervescent, one subrounded sedimentary mebble, indeterminant boundary.	<u>a</u>
98- 123 C2b1 (39- 48)	dark vellowish brown (10VR4/6) fine sand to loam. SF fine sand to loam. SF fine sand, with common fine strong brown (7.8VR)/6) Fe mottles, massive, noneffervescent, abrunt boundary.	520- 620 OU (205-244)	dark vellowish brown (10YR3/4) fine sand, slightly effervescent, indeterminant brondar	ů, Vi
123- 155 B2162 (46- 61)	base, with common (109RS/2) loam to clay loam, at CL base, with common fine brown to dark brown (7, SYR4/4) and with many medium very dark brayish brown (109RS/2) and with common fine dark yellowish brown (109RS/2) Fe mottles, weak medium subangular blocky, firm, noneffervescent, clear boundary.	620- 720+0U (244-283)	fine sand to medium and Coarse sand, with pea sized pekbles at base, strongl, effervescent, some loamy sediment between 640 and 660cm., refusal.	3
155- 168 B22b2 (61- 66)	brown to dark brown (7.59K4/2) clar loam, with CL many fine dark vellouish brown (10YR3/6) and with common fine brown (7.59R5/2) and brown to dark brown (7.59K4/4) mottles, few maneaneze mottles, moderate medium subangular block), firm, noneffervescent, pradual boundary.			
166- 199 B23b2 (66- 78)	brown to dark brown (7.5VR4/4) clay loam, with CL man, fine brown (7.5VR5/2) and vellowish brown (10VR5/6) and dark vellowish brown (10VR3/6) Fe mottles, fow managers mottles, moderate medium columner to subangular block at base, firm, noneffervescent, boundar, clearly marked by laminated heavily oxidized corrosion zone, very abrunt boundary.			

Master core number: 564 Location: NE:NW:SE:Sec.24.T174.K13W. DLC-20 between Indian Greet rd and Landscare rosition: deression betwee Surface archeology: none SCS maseed soil: Grio loan Elevation: 133.8m. (439ft.)	Master core number: 564 Location: NEINNASE.Sec.24.T1744.K13M, Cass Co.: apercoinately 6606 DLC-28 between Indian Greet of and Winklemans house Landscare Postston: derression between dunes on Bath Terrace remna Surface archeology: none SCS maseed soil: Give loam Elevation: 133.8m. (439ft.)	ft. west of ant	205- 520 OL (81-205)	dark vellowish brown (10VR3/6) to dark vellowish brown (10VR3/4) loamy fine sand to fine and medium sand with few pebbles, one laminae of graiish brown (2.5VS/2) silt at apero imatel. "700m.", several strong brown (7.5VR4/4) haminae between 480-500cm., noneffervescent, indeterminant
Cored by: David S. Leish and Julia E. Described bi: Edwin F. Haile: 7-7-84	.elsh and Oulla E. [11110h. 12-9-63 K. Halle. 7-7-84		520- 600 OU (205-236)	olive brown (2.5844/4) fine sand and medium sand, mottles, slightly effervescent, few mes sized
Death on Soil Horizon (in,) or Zone	Description C1	Unified Soil		かごうしていません そうじゅうにん でもでき はっちゅう しょうかん アンカー・ション・アンカー・ション・アンカー・アンカー・アンカー・アンカー・アンカー・アンカー・アンカー・アンカ
0- 8 A11	black (10YR2/1) loam, weak fine granular, very friable, strongly effervescent, carbonates probabl, fron road dust, common fine roots, c) boundar,	y ML		
8- 21 A12 (3- 8)	very dark brown (10VR2/2) fine sand, loam, weak fine sranular, very friable, noneffervescent, clear boundary.	ů.		
21- 46 A2 8- 18)	dark pravish brown (10YR4/2) fine sand: loam, with common fine dark vellowish brown (10YR3/6) mottles, ver weak medium plate., to weak medium subangular blocky, friable, noneffervescent, abrupt boundary.	S.F. ium		
46- 72 B21 (18- 28)	dark vellowish brown (109K4/4) fine sand, loam, moderate medium subangular blocks, friable, noneffervescent, vers high porosits, clear boundars.	e e		
72- 107 B22 (28- 42)	vellowish brown (10985/4) heav. loam, moderate medium subangular blocks, firm, noneffervescenclear boundary.	e ML		
107- 133 B3 (42- 52)	dark rellowish brown (109K4/4) heavy loam, wit few larme dark yellowish brown (109K3/4) mottl. moderate coarse subangular thocky, noneffervescent, very abrupt boundary.	th ML les,		
133- 151 1101 (52- 59)	clive brown (2.574.5/4) fine sand and medium single grain, loose, noneffervescent, abrupt boundary.	ب ن ن ن ن ن ن ن ن ن ن		
151- 169 111C2(OL) (59- 67)	brown to dark brown (7.5YR4/4) and dark vellowish brown (10YR3.5/4) class loam and loams weak thick laminase, noneffervescent, abrupt boundars.	wish CL lck		
169- 205 (L (&7- 61)	brown (10YR5/3) and dark rellowish brown (10YR3/4) and dark rellowish brown (10rr4/6) s loam, silts clar loam, loam, fine sand, fine s tratified and laminated, noneffervescent, few managers mottles, abrupt boundar.	511t sand.		

Master core number: 565
Location: SW:SW:NE:Sec.24.T17N.R13W. Cass Co.: west of fork in C. Winkleman's driveway midua. Educer first two large oal, trees
driveway midua. Ectueror first two large oal, trees
Landscape position: dure on Bath (?) Terrace remnant
Surface archeology: none
SCS mapped soil: Plainfield loam: sand
Elevation: 135.9m. (4464t)
Coned by: Dayld S. Leish and Julia E. Clifton: 12-9-83

0- 11 A11 veri 0- 4) mediu abund bound 11- 21 A22 dark (4- 8) mediu 21- 48 B2 dark (8- 19) srain 133- 149 A1b1 dark (52- 59) clear (59- 61) mediu atund (52- 59) srain (59- 61) meak	Description Clas	Classification
21 A22 8) 48 B2 19) 133 C1 52) 149 A1b1 59) 154 B2b1	vers dark brown (10VR2/2) loans fine sand, weak medium eranular, vers friable, noneffervescent, abundant fine roots, few medium roots, clear boundars.	æ
48 B2 19) 133 C1 52) 149 A1b1 59) 154 B2b1	dark brown (10YR3/3) loam: fine sand, ver, weal medium brandlar, ver: friable, noneffervescent, abundant fine roots, clear boundary.	8
133 C1 52) 149 Albi 59) 154 B2bi 61)	dark vellowish brown (10VR3/6) fine sand, sinele grain, loose, noneffervescent, few fine roots, gradual boundary.	ů. Ö
149 Albi 59) 154 B2bi 61)	dark vellowish brown (10YK4/6) fine sand, sinsle grain, loose, noneffervescent, clear boundary.	ů. V
154 B261 61)	dark vellowish brown (10VR4/4) fine sand, sinsle grain, locse, noneffervescent, few fine roots, clear boundary.	a. v
	dark vellowish brown (109K3/4) loam, fine sand, weak medium subansular block,, friable, noneffervescent, clear boundar.,	Ü
154- 162 C11 dar (61- 64) sra	dark vellouish brown (10YR4/4) fine sand, single grain, loose, noneffervescent, clear boundar	ď,
162- 204 A152 dar (64- 60) com com	dark brown (10VR3/3) fine sandr loam, weal, fine subangular blocky, friable, noneffervescent, common uncarbonized organic matter, clear boundary.	å.
204-318 BCb2 dar (80-125) bro blo	dark vellowish brown (10YR3/6) and dark vellowish brown (10YR3/4) loam, moderate medium subansular blocky, firm, noneffervescent, few fine roots, gradual boundary.	뒫
318- 420 C12 dar (125-165) bro loa era	dark vellowish brown (10VR3/4) and dark vellowish brown (10VR3/4) and velowish brown (10VR5/4) loam: fine sand and fine sand, friable to single grain loose, noneffervescent, probably criginally stratified, clear boundary.	g.
420- 684 OL dar (165-269) med	dark ve)lowish brown (10YR4/4) fine sand to medium sand, noneffervescent, bradual boundari.	es S

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brown to dark brown (10YR4/3) medium to coarse subbles, slimbtly effervescent, mebbles are land quartz, subrounded to subanmular, refusel,

684- 840+0U (269-331)

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DLC-31				
Master core numbers Locations NM:NM:SW:S	Master core numbers 566 Locations NWINWISWISEC.18, T17N.R12W. Cass Co., 30ft. south of Indian Creek	332- 360 OL (131-142)	vellowish brown (10VRE/6) fine sand, noneffervescent, indeterminant boundars.	Ē
rd. and 120 ft. Landscare position Surface archeology SCS marred soil: A	nd, and 120 ft. east of M. Minkleman's driveway. Landscare rosition; on Bluffs Terrace near eastern scare. Surface archeology; few flakes, probably part of the Marlin Winkleman site. SCS mapped soil: Alvin fine sand, loam.	360- 378 GL (142-149)	dark brown (10YK3/S) and dark vellowish brown (10YKS/4) loam and fine sand, laminated, noneffervescent, indeterminant boundary.	Ę
Elevations 134.4m. Cored bys David S. Described bys Edus	Elevation: 134.4m. (4417). Cored by: David S. Leish and Julia E. Clifton, 12-12-83 Described by: Edwin R. Hails, 7-29-84	378- 402 OU (149-158)	vellowish brown (10YR5/6) fine sand, strongly effervescent, indeterminant boundar.	es.
Deeth cm Soil Horizon (in.) or Zone	Unified Soil Description Classification	402- 497 OU (158-196)	dark vellowish brown (10VR4/6) fine sand and medium sand, with leanne of olive (SYS/3) silt and clave, silt, strongly effervescent, indeterminant boundary.	e.
0- 23 A1 (0- 9)	very dark analysh brown (10VR3/2) very fine sandy SP loan, weak fine subansular blocky, friable, consefery except, clear boundary.	497- 517 DU (196-204)	dark brown (10VK3/3) medium and coarse sand. slightly effervescent, indeterminant boundary.	ট্ট
23- 34 A2 (9- 13)	dark enexists brown (10VK4/2) very fine sandy loam, SP weak medium subangular blocky, friable, noneffervescent, abrust boundary.	517- 600 DU (204-236)	dark vellowish brown (109K4/6) to darf brown (109K3/3) medium and coarse sand, slightly effervescent, indeterminant boundary.	ŭ. Ø
34- 60 B1 (13- 24)	dark vellowish brown (10YR4/4) light loam, weak ML medium subangular block: (fitable, noneffervescent, clear boundary.	600- 650 OU (236-256)	dark vellowish brown (10YR4/4) medium sand, with few brown to dark brown (7.5YR4/4) thick laminae, slightly effervescent, indeterminant boundary.	a. S
60- 76 B21t	brown to dark brown (7.5YR4/4) loam, moderate	650- 760 UU (256-299)	olive gray (5744/2) medium and coarse sand, violently effervescent, indeterminant boundary.	ů,
(74-30)	ndank.	760- 610 UU (299-319)	dark erayish brown (2.5V4/2) fine and medium sand, with clive eray (5V4/2) thick silt and clave, silt laminae, violently, effervescent, conserved to boundary.	ů. vi
76- 105 B22t (30- 41)	brown to dark brown (7.5VK4/4) heavy loam, ML moderate medium and coarse subangular blocks. Firm, noneffervescent, common thin dark brown (7.5VR3/4) clay coats on ped faces, clear boundars.	810- 820 UU (319-323)	inderterminant boundary. dark gravish brown (2.5V4/2) medium and coarse sand with common rea sized retbles, violently effectivescent indeterminant houndary.	ů, vô
105- 146 IIB31 (41- 57)	dark vellowish brown (10YR4/6) loam) ver; fine ML sand, very weak coarse subangular block), very friable, noneffervescent, clear boundars.	820- 880+UU (323-346)	dark gravish brown (2.5V4/2) fine and medium sand, violently effervescent, refusal,	G G
146- 165 111B32 (57- 65)	brown to dark brown (7.5YR4/4) loam, weak coarse ML subangular blocky, fraable, noneffervescent, clear boundary.			
165- 217 IVC(OL) (65- 85)	dark vellowish brown (10YR4/4) and dark brown (7 ML SYR3/4) loam and very fine sand, loam, stratified, noneffervescent, clear boundary.			
217- 240 OL (85- 94)	vellowish brown (10YR5/6) fine sand, single grain, SP loose, noneffervescent, very abrupt boundary.			
240- 332 DU (94-131)	olive (5Y5/3) and brown to dark brown (7.5YR4/2) ML and (7.5YR5/2) silt, weally laminated, ver. Blightly effervescent, few oxidized ver. fine sand laminae, last 5cm, has heavily oxidized strong laminae of ver. fine sand and silt, very abrupt boundary.			

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293-522 IIIC(M.) dark preenish gray (554/1) silty cla. and coarse silt, weally stratified to massive with few subangular blacky zones of blact (572.5/1) silty cla., nonefferescent, few medium and fine roots, one small area of dark reddish gra, (5764/2) coarse silt possibly just due to oxidation, clear boundary.	522- 551 UL very dark gray (5Y3/1) silty clay (with strata of fine and medium sandy silty clay, weakly stratified, noneffervescent, one large decomposed	uncarbonized piece of organic matter, sandier zones with fine disseminated uncarbonized organic matter, abrupt boundary.	551-565 UU derk erav (574/1) silt, massive with few laminated zones, strongly effervescent, very few medium pieces of uncarbonized organic matter, possibly roots, eradual boundary.	585- 720+UU dark erax (574/1) silt and mebbly medium and (230-283) coarse sand, stratified, strongly efferwescent, very few medium pieces of uncarbonized organic	Batter, Tossibly roots, refusal.						
	•	Unified Soil Classification	로	ੱ ਹ	J.	ರ	ರ	ರ	บ	ರ	វ :
6 Cc., 125ft. foot of Bluf	Cored by: David S. Leigh and Julia E. Clifton, 12-12-83 Described b.: Edwin R. Hallo, 7-26-84	Description	verk dark stayish brown (10VR3/2) silt loam and fine sandk silt loam, weak fine subansular block; friable, nonefferveskent, abruet boundar.	black (10VK2/1) silts clas loam, moderate medium columner breaking to moderate fine angular blocks firms noneffervescent, gradual boundars.	black (10VR2/1) sult, clay loam, moderate coarse columner breaking to moderate medium angular blocky, firm, noneffervescent, clear boundard.	very dark snar (109K3/1) silty clar, moderate fine subansular blocky, firm, noneffervescent, clear boundary.	dark stay (10VR4/1) silty clav, moderate medium columnar, firm, noneffervescent, many moderately thick very dark staylsh brown (10VR3/2) clay coats in sores, clear broundary.	dark star (10VR4/1) silty clar loam, with common fine dark yellowish brown (10VR3/4) Fe mottles, moderate medium subansular blocky, firm, noneffervescent, Plentiful fine vertical Foots, clear boundary.	dark stay (10VR4/1) clay, with many fine and medium very dark stay (10VR3/1) and with many very fine lisht stay to stay (10VR6/1) mottles, meak medium subansular blocky, very firm, noneffervescent, few medium and fine roots, clear boundary.	dark star (574/1) clav, with many medium dark starts brown (2.574/2) and black (572.5/2) and with many medium and fine yellowish brown (109R5/6) mottles, weak coarse subansular blocky, very firm, noneffervescent, few medium and fine roots, clear boundars.	dark pray (574/1) class with mans medium and fine olive (574/4) and with mans fine sellowish brown (10785/2) Fe mottless weal coarse subangular blockvery firm, noneffervescents few medium and fine rootss gradual boundars.
Master core number: 567 Master core number: 567 Location: Nat.Nat.Sbt. Sec.18.117N.Fl. 354: south of Indian Greek rd. Landscape position: floudbasin ch. Surface archeology: none 5CS masted soil: Beaucour silts of Elevation: 132.6m. (4354).	Cored by: David S. Described by: Edwar	Deeth om Soil Horizon (in.) or Zone	0- 33 C1 (0- 13)	33- 60 B21b (13- 24)	60- 75 B22b1 (24- 30)	75- 127 B23619 (30- 50)	127- 170 B2461m (50- 67)	170- 205 825b19 (67- 81)	205- 246 IIB26b1s (81-97)	246- 270 IIB31519 (97-106)	270- 293 IIB32619 (106-115)

Surface archeology; none SCS mapped soil: Beaucoup silts clay loam Elevation: 131-4m, (431ft.) Cored by: David S. Leish and Julia E. Clifton, 12-12-83 Described by: Edwin R. Hallic, 7-26-84

(in.) or Zone	Description Classification	Catio
0- 10 C1	black (10YR2/1) siltr clar loam, weak fine subansular blocks, firm, noneffervescent, clear boundars.	ರ
10- 39 C2 4- 15)	black (10VK2/1) siltr clar loam, moderate medium angular blocks, firm, noneffervescent, clear boundary.	C
39- 81 B2b 15- 32)	dark bravish brown (2.574.5/2) heavisilt loam, with many fine olive brown (2.574/4) mottles, weak medium subarbular blocks, friable, noneffervescent, common thin dark arayish brown (2.574/2) cla, coats on ped faces, clear brown (2.574/2) cla, coats on ped faces, clear boundary.	퇸
81- 100 B3b (32- 39)	gravish brown (2.595/2) salt loam, with many fine olive brown (2.5944) mottles, very weak medium subansular blocky, friable, noneffervescent, few thin dark gravish brown (2.594/2) coats in pores, one very dark gravish brown (2.594/2) frotovina, gradual boundary.	로
100- 152 C1b (39- 60)	eravish brown (2.575/2) silt loam to fine sandy silt loam at base, with many fine yellowish brown (10YR5/6) Fe mottles, weak coarse subangular blocky, friable, noneffervescent, few fine vertical roots, clear boundary.	Ĕ .
152- 192 IIC2b (UU) (60- 76)	dark gray (574/1) fine sandy loam to loamy fine sand at base, massive, very slightly effervescent, stratum at 180-190cm, of olive gray (574/2) silt loam with Plentiful fine brown to dark brown (7.5784/2) mottles, clear boundary.	Ŗ
192- 480 IIC3b(UU) (76-189)	dark ørav (5Y4/1) medium sand, massive, verv slishtly effervescent, indeterminant boundarv.	S
480- 700 Utj (189-276)	black (5V2.5/1) clavi fine sandr clavi silt, and loamy fine sand, strongly lamnated and thinly bedded, slightly to strongly effervescent (variable), few dark brown (7.5YR3/3) laminae, few fine pieces of organic matter, indeterminant boundary.	ಕ
706- 760+UU (276-307)	dark oral (574/1) rebbly medium and coarse sand, subnounded rebbles, refusal,	3

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Landscape resistant trond paleochannel pre Surface archeologis none Surface archeologis none Surface archeologis none Sign mapped soils Beaucoup silt, clai loam Elevationi 152.0m. (435%). Cored by: Boyid S. Leiph and Julia E. Clii Described bi: Edwin R. Haild, 7-7-84 Described bi: Edwin R. Haild, 7-7-84 (in.) for Zone C. Diact (10YRZVI) silt, (0-10) black black; brealing block; firm, noneffeet angular block; brealing block; firm, noneffeet 25- 55 bl. black (10YRZVI) silt, (10-22)	and bott, west of old, hun, also Landscape resultable froad palecohance) grading to Indian Greek valle. Surface archeology, now a sufficient old.		355- 360 UU		
6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		•	(74)	olive (5Y4/3) coarse silt, meall, laminated, ver slightl, effervescent, abrupt boundar.,	된 E
Soil Horizo or Zone AP	.) and Julia E. Clifton, 12-12-63		360- 580 UJ (142-228)	dark arableh brown (2.574/2) fine sand, slightl. effervescent, indeterminant boundars.	4,74
Soil Heriza or Zone AP	10-7-7		580- 600 UU (228-236)	dark gravish brown (2.574/2) fine sand with little silt, slightly effervescent, abundant film	3 5
q 19	U O Unitariosed	Unified Soil Classification		and medium Preces of uncarbonized organic matter.	
161	blact (10YR2/1) salt, clar loam, weat medium angular bloct, breating to weat fanc angular block,, farm, noneffervescent, clear boundar	5	600	dark araish trown (2.574/2) rebbl: sand, poorl). sorted: violentl: effervescent: refusal.	S.
(2.5%) block:	black (10YR2/1) silt, clar loam, with common fine very dark granish brown (2.5Y3/2) and olive brown (2.5Y4/4) mottles, moderate medium subangular block of breaking to moderate fine subangular block.	ر سرن سرن	96-310		
55- 93 B2 dark s (22-37) silt l 574/4) friabl	Diock., friable, noneffervescent, cleaf boundar, dark granish brown (2.5%4/2) silt, cla, loam to silt loam at base, ith man, fine olive brown (2.5%4/4) mottles, moderate medium subangular block friable, noneffervescent, man, thin very dark gran, h brown (2.5%3/2) coats on ped faces and pores, clear boundar	ម : .៎	Master core number: Location: NW.NW.SW. fenceline and 80F Landscape Position: Surface archeology: SCS marped soil: Pl Elevation: 129.1n. Cored by: David S.	Cass Co., 20ft. east of M. Creek rd. Jerrace remnant d Danley, 5-59-84	Wani Temanis
93- 152 IIB3 searish b (37- 60) 5744.4) mo filaele mo filaele mo filaele boundary.	gravish brown (2.5%5/2) silt loam with abundant very fine sand, with man, fine olive brown (2. 5%4/4) mothles, weak coarse substangular block firiable, noneffervescent, common thin very dark graiish brown (2.5%3/2) coats in pores, clear boundary.	ž	Described by: Edwin R Depth om Soil Horizon (in.) or Zone	tion	Unified Soil Classification
152- 182 ICI#(UL) olive (60- 72) submins	olive grav (5V5/2) verv fine sand, loam, with few medium olive (5V4/3) mottles, weak coarse subangular blocks, friable, noneffervescent, abrupt boundary.	ط ط ع	0- 20 A1 (0- 6)	dark brown (10YR3/3) fine sand, very weal fine subangular block, very friable, noneffervescent abrupt boundary.	a 0
182- 201 IIIC29(UL) olive (72- 79) noneff	olive grav (SY4/2) very fine sand, massive, noneffervescent, few very fine organic matter bates, very dam dise rocks, abrust boundary	ů. Vi	18	wark ferroming promote the variable, were fine subangular blocks, very friable, noneffervescent, clear boundar.	L Ö
201-213 UU 011Ve (79-84) slight	olive grav (574/2) silty very fine sand, massive, slightly effervescent, very few fine roots, abrupt boundary.	SP .	45- 88 C (18- 35) 88- 307 OL	vellowish brown (10YR5/6) fine sand, single grain, loose, noneffervescent, clear boundar yellowish brown (10YR5/8) fine sand,	a a o
213- 302 UL clive (44-119) noneff	olive gray (SVS/2) very fine sand, massive, noneffervescent, abrupt boundar	ů. V	(35-121) 307- 350 OL (121-138)	noneffervescent, indeterminant boundary. cark vellowish brown (100R4/4) fine sand. noneffervescent, indeterminant boundary.	ŭ. Vi
302 346 Uti olive era (119-136) olive (57 lamianted	olive grav (5V5/2) and olive grav (5V4/2) and olive (5V4/3) silt and very fine sand, moderately lambanted, slightly effervescent, very abrupt houndary.	 	350- 420+0L (138-165)	dark brown (10YR3/3) loam, noneffervescent, refusal,	Ĕ

DLC-36			DLC-38		
Master Core number: 571 Locations NE.NE.Sec.5.TioN.KIZM. Landscape Positions medial alluvial SCS mapped soils Plainfield loam: sa Elevation: 140.2m (4601t.) Cored bis DSL. GED Described by DSL	Master Core number: 571 Location: NE.NE.NE.Sec.5.Ti6N.K12W, Morean County Landscape position: medial alluvial fan SCS mapred soll: Plainfield loam: sand Elevation: 140.2m (460ft.) Cored bi: DSL. CCD Described bi: DSL		Master core number: Location: NE.NH.NE.: Landscape Position: SCS mapped soil: Ra Elevation: 132.6m. Cored by: DSL, CCD Described by: DSL	Master core number: 573 Location: NE:NW-NE:Sec.25.T17N.R13W, Cass County Landscape Position: Bus Island channel 5C5 mapped soil: Raddle silt loam 5C5 mapped soil: Raddle silt loam Cored by: D5L, CCD Described by: D5L	
Derth cm Soal Horazon (an.) or Zone	Description	Unified Soil Classification	Derth on Soil Horizon (in,) or Zone	Description	Unified Soil Classification
0- 50 SOLUM (0- 20)	loams mand, abrumt boundar,	ďS	0-315 SOLUM (0-45)	light silt loam, clear boundary	É
50- 450+2(0L) (20-189)	vellowish brown (10VR5/8) to lisht clive brown (2.5Y5/6) medium sand, single grain, noneffer-vescent, refusal.	g.	115- 178 C(MDL) (45- 70)	gravish brown (2.5%5/2) sandy silt loam, with common medium dark vellowish brown (10%64/6) mottles, weak coarse subangular blocky, noneffervescent, few ver, thin sand lenses toward base, gradual boundary.	Ę
DEC-37 Master core number! Location: Nav.Ne. 50E.5	DEC-37 Master core number: 572 Location: NA-NE-SE-Sec-3717N-RISW, Cass Co., approx. 40ft. east of	terrace	178- 232 MDL (70- 91)	stratified light brownish gray (2,576/2) fine sandy loam and gravish brown (2,575/2) fine sandy weak coarse subangular blocky, noneffervescenty strata are 5-10cm, thicky gradual boundary.	as
ACTION TO THE PROPERTY OF THE	Landscape positions done on Bluffs Terrace (2) Surface archeology: noor: noone		232- 348 O/DL (91-137)	light rellowish brown (2.576/4) medium sand, noneffervescent, abrumt boundar	Ω Ť
Elevation: 135.3m. Cored by: David S. Described by: Edul	Co. Mapped soll - Flating loam: Mand Elevation: 135.3m. (444ft.) Cored by: David S. Leish and Cynthia C. Danley, 5-29-84 Described by: Edwin F. Hajic, 8-12-84		348- 360 UL (137-142)	olive gray (SV5/2) fine silt, with few large darkyellowish brown (10VR4/6) mettles, massive, noneffervescent, abrust boundari,	된
Depth om Soal Horazon (an.) or Zone	Description	Unified Soil Classification	360- 600 0/DU (142-236)	light olive brown (2.5Y5/4) medium to coarse sand, single grain, slightly to very slighlt; effervescent, indeterminate boundary.	d, SP
0- 152 OL (-0- 60)	solum of Plainfield loamy sands fine sand.	o,	600- 720+0/DU (236-263)	light olive brown (2.575/4) coarse, very coarse sand, and pethles, single grain, very slightly effervescent, only few pethles, refusal.	3 .
152- 254 C(OL) (-60-100)	light clive brown (2.5Y5/4) fine sand, single grain, loose, noneffervescent, abrupt boundary.	<u>a</u> 5			
254- 422 0/DL (100-166)	dark vellowish brown (10VR4/4) and dark vellowish brown (10VR3/4) fine sand and medium sand, stratified with many Bravish brown (2.5V5/2), dark bravish brown (2.5V4/2), dark vellowish brown (10VR4/4), and brown to dark brown (7.5VR4,5/2) silt, sandy silt and claver silt, thin to thick strong laminae (few with reddish brown tinge), noneffervescent, clear boundary.	ზ			
422- 666 DIJ (166-260)	olive brown (2.5%4/4) fine sand and medium sand, stratified as above, silt is thin to thick strong laminae (few with reddish brown tings), variable strongly to slightly effervescent, clear boundary.	. Se			
660-720+bi) (260-283)	light olive brown (2.575/4) fine sand, strongl, effervescent, refusal.	ů, Vř			

DLC-39				DLC-40			
Master core number: 574 Location: SE.NN.NE.Sec.1.TL6N.R13W. Landscape Position: Indian Creek all SCS marred soil: Worthen silt loam Elevation: 135.9m (446ft.) Cored by: DSL. CCD	Master core number: 574 Location: SE.NW.NE.Sec.1.716N.R13W, Morsan County Landscape position: Indian Creek alluvium SCS mapped soil: Worthen silt loam Elevation: 135.9m (446ft.) Cored by: DSL. CCD Described by: DSL			Master core number: 575 Location: NM:SW:SE.Sec.1.T Landscape position: Indian SCS mapped soil: Beaucoup Elevation: 134.1m (440ft.) Cored by: DSL: CCD Described by: DSL	16N, R13W, Creek all silty clay	Morsen County Joan Joan	
Deeth ca Soil Horizon (in.) or Zone	Describtion	Unif	Unified Soil	Derth cm Soal Horizon (in.) or Zone	uoz	Description Cla	Unified Soil
0- 140 SOLUM	silt loam, clear boundary		럹	0- 173 SOLUM (0- 68)	clay, clear boundary		ರ
140- 165 BC1 (55- 65)	dark vellowish brown (10YR4/4) fine sandy loam, weak medium subansular blocky, noneffervescent, eradual boundary.	ie sandy loam, ieffervescent,	a S	173- 208 C(MDL) (68- 82)	ereenish eray (576/1) clay loam to silt loam, with few medium yellowish brown (mottles, weak coarse subangular blocky, nonefferyscent, clear boundary.	ereenish erav (576/1) clay loam to silty clay loam, with few medium vellowish brown (10YR5/8) noneffes, weak coarse subangular blocky, noneffervescent, clear boundary.	ಕ
165- 184 BC2 (65- 72)	brown to dark brown (109R4/3) fine sandy loam, weak very coarse subangular blocky, noneffervescent, abrust boundary.	sandy loam,	S.	208- 300 DL (82-118)	eravish brown (2.5Y5/noneffervescent, few	eravish brown (2.575/2) medium sand, single erain, noneffervescent, few mebbles, indeterminate	ags S
184- 238 O/DL (72-94)	light olive brown (2.5V5/4) medium sand, single grain, noneffervescent, clear boundary.	s sand, sinsle idary.	gs ds	300- 360 UL	Doundary. dark gray (5Y4/1) lis	Doundary. dark gray (5Y4/1) light silt loam to silt,	뒫
238- 296 MDL (94-117)	light olive brown (2,5V5/4) medium sand, single grain, noneffervescent, clear boundary.	sand, sinsle dary.	SP	(118-142)	massive, noneffervescormannic framments at boundary.	massive, noneffervescent, few fine diffusc orwanic framments at top of zone, indeterminate boundary.	
296- 296 MDL (117-117)	mottled dark yellowish brown (10YR4/6) silty sandy loam, moderate medium subansular to angular blocky, noneffervescent, original matrix color looks like 2.5V5/2,, clear boundary.	(4/6) silty cular to riginal matrix condary.	å	360- 600+UL (142-236)	dark gravish brown (2 sand, single grain, n	dark bravish brown (2.574/2) medium to coarse sand, single grain, noneffervescent, refusal.	ů
296- 330+0L (117-130)	dark vellowish brown (10YR4/6) medium sand, single grain, noneffervescent, refusal,	ium sand, usal,	g.				

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Master core number: 576 Location: NaiShiNE:Sec.1:T16N:R13H: Landscare resition: dune on Bluffs SCS marred soil: Flaintield loam: s	Master core numbers 576 Locations NM.SM.NE.Sec.1.116N.RIGM. Morgan County Landscare positions durie on Bluffs terrace SCS mapped soils Flainfield loans sand		320- 430 O/DL (126-169)	light olive brown (2.595/4) medium sand, sinsle grain, poneffervescent, few yer coarse sand smains toward base, indeterminate boundar.
Elevation: 135.6m (Cored by: DSL, CCD Described by: DSL	(44564.)		430- 480+6/DU (169-189)	light clive brown (2.5Y5/4) coarse sand, single grain, very slightly effervescent, includes common very coarse sand and pebble grains, refusal,
Deeth cm Soil Herizen (in.) or Zone	Description	Unified Soil Classification		
40 - 36 -0 HULL	fine sand, very abrupt boundary	8		
96- 119 Bub (38- 47)	dark vellowish brown (10VK4/4) sand: loam. moderate medium subansular blocks. noneffervescent, sradual boundars.	Ŗ		
119- 138 Cb(OL) (47- 54)	vellowish brown (10VKS/6) fine to medium sand, single grain, noneffervescent, abrupt boundary.	d o		
136- 157 OL (54- 62)	vellowish brown (10VR5/6), vellowish brown (10YR5/4) and vellowish brown (10YR5/8) medium sand, thinly stratified and laminated, moderate very coarse elater, noneffervescent, abrunt boundary.	a. V		
157- 192 MDL (62- 76)	light brownish gray (2.576/2) silt to light silt loam, with common medium dark rellowish brown (10984/6) and with faint few medium minkish gray (5987/2) mottles, moderate coarse subangular block), noneffervescent, very abrupt boundary.	된		
192- 223 OL (76- 88)	dark vellowish brown (109R4/6) medium sand, single grain, noneffervescent, one thin laminae of light brownish bray (2.5%6/2) silt, at 203-204cm., very abrupt boundary.	g.		
223- 239 MDL (88- 94)	light brownish gray (2.5V6/2) silt, noneffervescent, faintly laminated with few very thin medium sand lenses, faint light reddish brown (5VR6/3) lenses, and very thin Fe lenses, very abrust boundary.	£		
239- 303 O/DL (94-119)	light olive brown (2,5Y5/4) medium sand, single grain, noneffervescent, abrupt boundary.	as as		
303- 313 DL (119-123)	prayish brown (2.575/2) light silt loam, massive noneffervescent, few very thin Fe lenses and a faint pinkish brown hue, very abrupt boundary.	불		
313- 320 OL (123-126)	vellowish brown and dark vellowish brown (10VR5/8) (10VR4/6), reddish brown (5VR4/4) lisht brownish srar (2.5V6/2) and black (10VR2/1) sandy loan, very thinly laminated, massive, nonefferves—cent, this is a very hishly exidized zone with varves 2, abrupt boundary.	d S		

420-540 D dark vellowish brown (10YR3/6) fine sand to coarse sand, with few pebbles, poorly sorted, noted to sold to coarse sand, with few pebbles, poorly sorted, poorly of sandy pebbles, poorly sorted, pebbles are isneous and sedimentary subrounded to subangular, refusal	Unified Soil Classification	1	뒫	귶	뉟	d 5	SP	d. S	<u>ዋ</u>	3.0
Master core number: 577 Location: SE.SE.NW.Sec.24.TI7N.RI3W. Cass Co., midwa, between Bluffs Terrace scare and drainase ditch on C. Winkleman's field road Landscare and drainase ditch on C. Winkleman's field road road continued to Landscare Position: Possible natural levee in broad Paleochannel grading to Junian Creek valler. Surface archeology: none SCS mapped soil: Beardstown loam Elevation: 132.3m. (434ft.) Cored by: David S. Leish and Crithia C. Danler, 5-29-84 Described by: Edwin R. Hause, 7-9-84	Description	very dark brown (109R2/2) silt loam, weak fine øranular, friable, noneffervescent, abrurt boundary,	dark vellowish brown (10VRS/4) silt loam, weak fine subangular blocky, friable, noneffervescent, clear boundary.	dark vellowish brown (100KG/4) heav; silt loam, with few fine managereze mottles, weak medium subangular blocks, friable, noneffervescent, bradual boundary.	brown to dark brown (10VR4/3) loam, with common fine dark vellowish brown (10VR3/6) mottles, weak medium subangular blocky, friable, noneffervescent, pradual boundary.	dark yellowish brown (10VR4/4) loam: fine sand. with common fine brown to dark brown (10VR4/3) mottles, very weak medium subangular blocks, very friable, noneffervescent, gradual boundary.	dark vellowish brown (10YR3/4) fine sand, noneffervescent, indeterminant boundary.	dark yellowish brown (10VR3/6) fine sand, and olive stay (5Y5/2), yery dark stay (5Y3/1), and dark stay (5Y4/1), clay, stronsly laminated, clay is stronsly effervescent and sand is slightly effervescent, indeterminant boundary.	derk vellowish brown (10VR4/6) medium and coarse sand, slimbtly effervescent, indeterminant boundary.	brown to dark brown (7.5YR4/4) and dark grav (5Y4/1) clay, and dark vellowish brown (10YR4/6) medium and coarse sand, strome), laminated, very
Master core number: 577 Location: SE.SE.NM.Sec.22 scare and drainage dift Landscape position: poss Indian (resk valler SUS mapped soil: Beardst Elevation: 132,3a. (4346) Cored by: David S. Leiph Described by: Edwin R. H.	Deeth cm Soil Horizon (in.) or Zone	0- 27 AP 0- 11)	27- 44 B1 (11-17)	89 B2	115 1183 45)	115- 130 IIIC1 45- 51)	130- 310 OL 51-122)	310- 345 G/UU 122-136)	345- 360 DU 136-142)	360- 420 6/UU 142-165)

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DLC-42

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Described by: Edwin R Depth on Soil Horizon (in.) or Zone	Johnson & J. C. Danley, 5-31-84 Hallo, 8-12-84 Description	Unified Soil Classification
	very dark brown (10YR2/2) and very dark statish brown (10YR3/2), and dark brown (10YR3/2) and brown (10YR3/2) and brown (10YR3/2) and brown (10YR3/2) and fine sands the sand salt and few units of fine sands stratified with some units exhibiting strong laminations, massive, bioturbation or weak fine subanations, slightly effervescent with few Zones strongly effervescent with few Zones few zones with few fine foots, abrupt boundary.	록
159- 332 C2 (63-131)	very dark pravish brown (10VR3/2) and very dark pravish brown (2.5V3/2), and very dark gray (10VR3/1) silt, silt loam and few units of fine sand, variable colors, stratified with some units exhibiting strong laminations, massive bioturbation or weak to moderate fine subangular blocky, noneffervescent, few thin dark vellowish brown (10VR3/4) and redder fe coats on ped faces, very abrupt boundary.	뒫
332- 390 MDL (131-154)	buried solum very dark graz (10VR3/1) silt, clar loam, with common fine and medium dark vellowish brown (10VR3/4) and darker Fe mottles, noneffervescent, clear boundary.	CL brown
390- 550 Cb(MUL) (154-217)	AUL) very dark grav (5V2.5/1) and dark grav (5V4/1) silty clay loam and silty clay, with common fine and medium dark vellowish brown (10VK3/4) Fe mottl noneffervescent, weakly stratified with weak subangular blocky structure throughout, clear to abrupt boundary.	CL
550- 760 MUL (217-299)	dark preenish prav (5594/1) coarse silt, mith common medium and larse dark vellouish brown (10983/4) and olive (594/4) mottles, massive, noneffervescent, clear boundary.	턴
760- 925 UL (299-364)	dark preenish pray (5694/1) coarse silt, massive, noneffervescent to very slightly effervescent at base, common uncarbonized medium and fine organic matter pieces, clear to akrupt boundar.	털
925- 930+UU	dark gray (5Y4/1) fine and medium sand, strongly effervescent, refusal,	ŝ

black (10VRZVI) to dark brown (10VRZVI) variable, ML sailt loam and silts clav loam stratified with source with moderate fire dushables to block structure; flucks structure; fluckstructure; fluckstructure; fluckstructure; fluckstructure; fluckstr	(10.) of Zone	Description	Unified Soil Classification	
Albi black (100K2/1) heav, silt loam, weat fine ML boundary. Bitl very dark brown (100K2/2) silty clai loam, weat claim adding subtained by boundary. AlbZ black (100K2/1) silty clai loam, weat claim faces, clear boundary. Bitl black (100K2/1) silty clai loam, weat fine faces, clear boundary. Bitl black (100K2/1) silty clai loam, weat fine faces, clear boundary. Bitl black (100K2/1) silty clai loam, weat fine claim thin black (100K2/1) clay coats on ped faces, clear boundary. Bitl black (100K2/1) silty clai loam, weat fine with few fine very dark brainsh brown (100K3/2) mottles, weak coarse subangular block; firm, noneffervercent; few fine fe concretions; clear common fine dark vellowish brown (100K3/2) and dark was (100K4/1) heavy silty clai loam, with many fine and medium dark; vellowish brown (100K3/2) and dark was silty clai loam, with many fine and medium dark; vellowish brown (100K3/2) and dark willowish brown (100K3/2) and dark willowi	107	black (10YR2/1) to dark brown (10YR3/3) variable silt loam and silt, clay loam, stratified with zones with moderate fine subansular blocky structure friable, nonefferoescent, few zones moderately to heavily bioturbated, akruet boundary.		DLC-45 Master core numbers Locations SW.SE.NW. area with reed an Landscare rositions Paleochannel Brad
### BED1 very dark brown (10YR2/2) salty clain loam, weak medium subaneular blocks: firm, noneffervescent, common than black (10YR2/1) clay coats on red faces: clast boundary. B2b2s very dark bran boundary. B2b2s very dark bran film, noneffervescent, clear boundary. with few fine very dark branish brown (10YR3/2) mothles, moderate medium subangular block; film, noneffervescent, few fine Fe concretions, clear boundary. C(MDL) very dark branish brown (10YR3/2) mothles, weak coatse subangular block; film, noneffervescent; many fine Fe concretions, few fine roots, clear boundary. C(MDL) very dark branish brown (10YR3/4) and dark sine fine month fine and medium dark relioush brown (10YR4/6) and dark vellowish brown (10YR3/6) and clive brown (2.5Y4/2) at base silty clay loam, uith many fine and medium dark relioush brown (10YR4/6) and dark vellowish brown (10YR3/6) and clive brown (2.5Y4/3) mothles, weak coatse subangular blocky, firm, noneffervescent, clear boundary. HUL dark brenith pray (5GV4/1) silt, clay zones, with common fine and medium olive brown (2.5Y3/4) mottles, measive, moneffervescent, few fine roots, gradual boundary. UL dark bras weekly statisfied inoneffervescent; few fine roots, very abrupt boundary.	107- 140 A151 (42- 55)	black (10VR2/1) heav, silt loam, meal fine angular block,, firm, noneffervescent, clear boundary,	분	Surface archeologis SCS mapped soils Da Elevations 131.7m. Cored bys David S.
B2b2s very dark star (10VR2/1) siltr clar loam, weak fine stanular: firm, noneffervescent, clear boundary. B2b2s very dark star (10VR3/1) heavy silt, clay loam, uith few fine very dark starish brown (10VR3/2) mottles, moderate medium subargular block; firm, noneffervescent, few fine Fe concretions, clear boundary. C(MDL) very dark star (10VR4/1) heavy siltr clay loam, with common fine dark vellowish brown (10VR3/4) mottles, weak coarse subargular block; firm, noneffervescent, many fine Fe concretions, few fine roots, clear boundary. C(MDL) very dark stavish brown (2.5V3/2) and dark starish brown (2.5V4/2) at base silty clay loam, uith many fine and medium of 10VR3/6) and (10VR4/6) and dark vellowish brown (10VR3/6) and (10VR4/6) and dark vellowish brown (10VR3/6) and (10VR4/6) and dark vellowish brown (2.5V3/4) subarrevial blocky, firm, noneffervescent, clear boundary. MUL dark stasive, noneffervescent, fining urward securce mith and medium olive brown (2.5V3/4) mottles, massive, noneffervescent, fining urward securce mith send and silt increasing with depth, few fine roots, stadial noneffervescent, few at base, weakly statisfied, noneffervescent, few fine roots, very abrunt boundary.	140- 163 Btb1 (55- 64)	very dark brown (10VR2/2) silty class loams wear medium subangular blocks, firms noneffervescent, common thin black (10VR2/1) class coats on pedfaces, clear boundars.		Described by: Edwin Depth om Soil Horiz (in.) or Zone
with few fine very dark brown (100k3/2) with few fine very dark brown (100k3/2) with few fine very dark brown (100k3/2) noneffervescent, few fine Fe concretions, clear boundary. B3b2e dark brown few fine Fe concretions, clear boundary. Gommon fine dark vallouish brown (100k3/4) motfles, weak coarse subanaylar block, firm, noneffervescent, many fine Fe concretions, few fine foots, clear boundary. C(MDL) very dark brown (2.59/3/2) and dark Bravish brown (2.59/3/2) at base silty clay loam, with many fine and medium dark vellouish brown (100k3/6) and sequence with band and silt increasing with depth, few fine roots, bradial boundary. UL dark bras, weakly stratisied, noneffervescent, few fine roots, very abrurt boundary.	163- 205 A162 (64- 81)	black (10VR2/1) silty clay loam, weak fine granular, firm, noneffervescent, clear boundary,		
CAME are stated to the solution of the solution of the dark vellowish brown (10983/4) mottles, week coarse subanapilar blocks, firm, noneffervescent, many fine Fe concretions, few fine roots, clear boundary. CAME overy dark prayish brown (2.593/2) and dark statish brown (2.594/2) at base silty clay loam, with many fine and medium dark vellowish brown (10984/6) and dark vellowish brown (10983/6) and clive brown (2.594/4) mottles, weak coarse subannapilar blocky, firm, noneffervescent, clear boundary. MUL dark preenish pray (5694/1) silt, clay zones, with common fine and medium ollive brown (2.593/4) mottles, massive, noneffervescent, fining upward sequence with sand and silt increasing with depth, few fine roots, gradual boundary. UL dark prexi (5944/1) sand, silt, clay to silty sand fine roots, very abrupt boundary.	205- 276 B2620 (81-109)	very dark gray (10VR3/1) heavy silt, clay loam, with few fine very dark grayish brown (10VR3/2) mottles, moderate medium subangular block, firm noneffervescent, few fine Fe concretions, clear boundary.		(0- 9) 23- 72 B2• (9- 28)
C(MDL) very dark measish brown (2.589/2) and dark measish brown (2.589/2) at base silty clar loam, mith many fine and medium dark vellowish brown (109K8/6) and dark vellowish brown (109K8/6) and olive brown (2.589/4) mottles, weak coarse subangular blocky, firm, noneffervescent, clear boundary. MUL dark preenish pray (5694/1) silt, clay zones, with common fine and medium olive brown (2.593/4) mottles, massive, noneffervescent, firms upward sequence with sand and silt increasing with depth, few fine roots, bradual boundary. UL dark pray (584/1) sand, silt, clay to silty sand fine roots, very abrupt boundary.	276- 335 B3620 (109-132)	dark eray (10VR4/1) heavy silty clay loan; with common fine dark vellowish brown (10VR3/4) mottles; weak coarse subangular block;, firm, noneffervescent; many fine Fe concretions; few fine roots; clear boundary.	ರ	72- 120 B3s (28- 47)
MUL dark preenish pray (5674/1) silt; clay zones, with CL common fine and medium olive brown (2.573/4) mottles, massive, notefferescent; fining upward sequence with sand and silt increasing with depth, few fine roots, gradual boundary. UL dark pray (574/1) sand, silt; clay to silt; sand class, weakly stratified, noneffervescent, few fine roots, very abrupt boundary.	335- 390 C(MDL) (132-154)	very dark bravish brown (2.593/2) and dark bravish brown (2.594/2) at base silty clay loamwith many fine and medium dark vellowish brown (10984/6) and dark vellowish brown (10983/6) and olive brown (2.594/4) mottles, weak coarse boundary.		120- 240 IIC#(UL) (47- 94) 240- 480+001
519 UL dark grav (574/1) sands silts class to silts sand at base, weakly stratified, noneffervescent, few fine roots, very abrust boundars.	390- 476 MUL (154-188)	dark preenish gray (5674/1) silt, clay zones, wi common fine and medium olive brown (2.593/4) mottles: massive, noneffervescent, fining upward sequence with sand and silt increasing with dept few fine roots, gradual boundary.		(94-189)
	478- 519 UL 186-204)	dark wray (574/1) sand, silty clay to silty sand at base, weakly stratified, noneffervescent, feafine roots, very abrust boundary.		

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black (572,5/1) sandy clay loam, weak medium subangular blocky, firm, noneffervescent, plentiful medium roots, common rea sized rebbles, one olive gray (574/2) zone at 101-104cm,, clear boundary.

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dark vellowish brown (10984/4) poorl, sorted fine to coarse sand with gravels, coarse gravel lens at 450cm., slightly effervescent, refusal.

very dark staxish brown (2.599/2) fine sand with some medium sand, noneffervescent, indeterminant boundary.

ቴ		rain of marshy P in broad	Unified Soil Classification	ular. fine	content, GL few
olive (5Y4/4) fine sand, refusal		Master core numbers 580 Locations SW.SE.NW.Sec.19.T17N.R12W. Cass Co., on eastern marsin of marshy area with reed and sedse vesetaion area sections amediately west of Eath (?) Terrace scare in broad realeochannel stading to Indian Creek valley Surface archeologis none SCS marred soils Darwin silty clay Elevations 131.7m. (432ft.) Cored by: David S. Leish and Cynthia C. Danley, 5-31-84 Described by: Edwin R. Hablo, 7-8-84	Description	black (5V2.5/1) clar loam, weak fine granular, firm, noneffervescent, man, fine and ver, fine roots, clear boundary.	black (5Y2.5/1) clay loam with hish sand content, weak medium subansular blocks, firm, noneffervescent, many very fine roots and few medium roots, occasional pea sized Pebble, seradual boundary.
011Ve (5Y4/4)		s 580 4. Sec. 19, 117N, R1 and seduce vesta and seduce vesta in immediately undian if none force larunn silty cla (432ft.) (432ft.) (Leigh and Cynt in R. Haute, 7-8	000	black (572.5/1) clar l firm, noneffervescent, roots, clear boundary.	black (5V2.5/1) c weak medium suban noneffervescent, medium roofs, occ eradum! boundary.
519- 530+UL (204-209)	DLC-45	Master core number: 580 Location: SW.SE.NW.Sec.19.T17N.R12W. Cass Coloration: SW.SE.NW.Sec.19.T17N.R12W. Cass Coloration SW.SE.NW.Sec.19.T17N.R12W. Cass Colorate and seden vertain mediate) west of Eath raleochannel grading to Indian Creek valley Surface archeologis none SCS mapred soils Darwin silty clay Elevation: 131.7m. (432ft.) Cored by: David S. Leigh and Cynthia C. Danle Described by: Edwin R. Habito, 7-8-84	Deeth om Soil Horizon (in.) or Zone	0- 23 AC (0- 9)	23- 72 B29 (9- 28)

DLC-47 Master core number: 581 Master core number: 582 Location; NE.NE.5W.5w.19.117N.K12W, Cass Co., 300ft, east southeast of DLC-45 Location; NE.NE.5W.5w.19.117N.K12W, Cass County Landscape position; Bath (") Terrace Landscape position; Bath (") Terrace SCS mapped archeology; one flate seen SCS mapped archeology; one fl	Unified Soil Derth cm Soil Horizon Description (in.) or Zone Description Classification	rown (10VK3/4) fine sand; single SP 0- 83 SOLUM highly organic clar, clear boundar, neffervescent, abrupt boundar, (0- 33)	dark beformsh brown (100M84/4) fine sand with SP 83- 118 UU dark preenish pray (564/1) pebbly clar, weal CL some silt, single prain, loose, noneffervescent, (33- 46) coarse subangular blocky, very slightly clear boundary.	dark vellowish brown (10YK4/4) loams fine sand. SF 118-298 D/UU lisht olive brown (2.5V5/4) econis sorted coarse SW weak bine subansular blocks, friable. (46-117) sand and rebbles, ver, slightly effervescent noneffervescent, clear boundars.	dark vellowish brown (10984/4) and brown to dark SW 298- 300+D/UU dark preenish pray (5694/1) pebbl, coarse sand, SW brown (7.5984/4) and strong brown (7.50x3/6) loan (117-118) very slightly efferyescent, one angular chert to loan fine sand at base, weak medium subangular blocky, friable, nonefferyescent, probably originally stratified, few pebbles and probably originally stratified, few pebbles and probably originally stratified, few pebbles and probably originally stratified.	brown to dark brown (7,5YR4/4) coarse silt. Strong brown (7,5YR5/6), dark vellowish brown (10YR3/6), (10YR4/6) fine sand fine sandy clar loam, moderately thick laminae and thin beds, noneffervescent, correlate with thin beds, noneffervescent, correlate with strongly except here conces of this transect except here composed largely of sandy laminae and very rare deoxidized colors, indeterminant boundary.	
DLC-46. Master core number: 561. Master core number: 561. Locations NE.NE.544.5ec.;9, TIZN.RIZM. Cass Co., 300ft. e. Landscape positions Bath (*) Terrace Surface archeology; one flate seen SCS masted soil: Sparta loam, sand Elevations 134, 7m, (442rt.) Cored by: Dayld S. Lesah and Cynthia C. Danler, 5-31-64 Described by: Edwin R. Halle, 7-8-84	Deeth ca Soil Horizon (in.) or Zone		24- 47 A dark rellowish (9-19) some silt, sing Clear boundary.	47- 64 Bl dark vellow (19- 25) weak tine so nonefferves	64-126 B2 dark vellow 25-50) to loamy ful subangular i Probably or	126- 220 C strong brown (7, 9YR3/6) (10VR3/6), (10VR4/6) fa sandy clar loam, modera thin beds, noneffervesc strongly laminated zone transact except here co laminae and very rare d indeterminant boundary.	220- ABO+OI

DLC-48					
Master core number: 583 Location: SH-56:NW.Sec.19.T17N.I datch just off of datch spoal	583 Sec.19.TI7N.RI2M. Cass Co approx. 75ft. eas ditch spoil	it of drainage	330- 400 UU (130-157)	very dark aravish brown (2.3V3/2) fine to coarse sand, soorly sorted, few mebbles, strongly effervescent, indeterminant boundary.	
remain the second property of the second prop			400- 450 BU (157-177)	brown (10YR5/3) sand, little recovery, indeterminant boundary.	
Described by: Edei	Elevation 131.4m. (431ft.) Cored by: David S. Leish and Cinthia C. Danler, 6-1-64 Described by: Edwin R. Malic, 7-9-84		450- 480 UU (177-189)	very dark aray (5Y3/1) clayer sand and sand, clay, strongly effervescent sand and very slughtly effervescent clay, no original stratification preserved, few mea sized pebbles at base, refusal,	
Depth cm Soil Horizon (in.) or Zone	Describtion	Unified Soil Classification	480- 520 UU (189-205)	dark ara: (504/1) poorly sorted sand and coarse sand, few rea sized rebbles: strongly effervescent: indeterminant boundary.	
0- 24 AP	black (5V2/1) silty clay loam, weak fine subangular block., firm, noneffervescent, clear boundary.	ช	520- 600+0U (205-236)	derk vellowish brown (10VK3/6) roorly sorted sand with common rebbles and bravel, refusal.	
24- 60 B1s 9-24)	black (5V2,5/1) silty clay loam, moderate medium subangular blocky, firm, noneffervescent, many dark vellowish brown (10VR3/4) coats in porest clear boundary.	CC W			
60- 119 B2m (24- 47)	dark blive snav (5V3/2) silty clair mith common large very dark snav (5V3/1) mottles, moderate medium subangular blocky, firm, noneffervescent, many very dark snav (5V3/1) moderately thick coats in pores and thin coats on ped faces, one knotovina of black (5V2,5/1) silty clair, clear boundary.	ت د ن ،			
119- 140 B31s (47- 55)	olive (5V4/4) silty clar, with man, fine dark vellowish brown (10VR4/5) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, man, black (5V2.5/1) moderately thick coats in pores and few coats on ped faces, clear boundary.				
140~ 120 B32e (55~ 47)	derk preenish pray (564/1) silty clay, with common fine dark yellowish brown (100K4/6) Fe mottles, weak coarse subangular blocky, firm, noneffervescent, one zone of olive brown (2, 593/4) silty clay so 164-170cm, common black (592.5/4) moderately thick coats in pores and few on ped faces, plentiful medium roots, clear to abrupt boundary.	ರ ತ್ರಿ			
120- 260 11Cs(UU) (47-102)	dark greenish grav (564/1) silt, massive, strongly effervescent, few medium roots, very abrust boundary.	분			
260- 330 UU (102-130)	dark prex (5Y4/1) silt and siltx class olive brax (5Y4/2) class and rebble lenses, think thedeed and thickly laminated, strongly effervescent, sands are poorly sorted, abrust boundary.	ray ML and s			

DLC-43			DLC-50		
Master core number: 584 Location: NM.SE.NE.Sec.30.1 Landscape rosition: dune or 5CS marred soil: Plainfiel Elevation: 136.6m (446ft.) Cored by: DSL.CCD	Master core number: 584 Location: NW. SE.NE. Sec. 30.117N. R12W CassCount. Landscape position: dune on Bath (?) terrace 5CS marred soil: Plainfield loam, sand Elevation: 136.6m (446ft.) Cored by: DSL.CCD Described by: DSL.		Master core number: 585 Location: SHANW.NE.Sec.11.TIGN.FID Landscare Position: dune on Plotfs SCS marked soll: Sparta look, sand Elevation: 135.6m (445): Cored by: DSL, CCD Described by: DSL	Master core numbers 585 Locations SW-NW-NE-Sec.11.TI&N.F.C.W. Morean Count. Landscape Positions done on Plotés terrace SCS mareed solls Sparta lock. sand Elecations 135.6m (445); Cored by: DSL. CCP Described by: DSL.	
Depth on Soal Monazon	. Description	Unified Soil Classification	Depth on Soil Hori, in	Description	Unified Soil Classification
0- 77 SP01L (0- 30)	abricat boundar.	ď	0- 100 SOLUM 0- 39)	loga, ward, whrest beendard	3. a.
77- 157 SOLUMB (30- 62)	medium loamy sands abrust boundars	å	100- 238 2Bwb (39- 94)	gravish brown (2,5Y5/2) to light brownish grav (2,5Y6/2) heavy silt loam, with common medium	륃
157- 220 28b (62- 87)	brown to dark brown (IOVRA/3) clay loam, moderat medium prismatic, firm, noneffervescent, gradual boundary.	oderate CL adoal		reliquish brown (10785/7) mettles, moderate ver- coarse prismatic. Ver, firm, moneffervescent, printish brain (5767/2) hue at 175cm., silans on ped faces at (op of zone, soil structure fades,	
220- 263 Cb(OL) (87-104)	brown to dark brown (10YR4/3) sandy loam, weak coarse subarsular block:, noneffervescent, eradual boundary.	erat SP	238- 300 OL (94-118)	gradual bornuári. brown to dark brown (10984/3) sand. loam. statified with few silt lenses, single grain.	ů. V
263- 300 MDL (104-118)	light olive brown (2.59%)/e) sandy clay loan, mit common medium light brownish gray (2.5%)/2) mottles, weak coars subangular blocks, noneffervescent, stadual boundary.	m, with CL	300-400 0t (118-157)	noneffervescent, indeterminate boundari. dark vellowish brown (100R474) medium sand. single grain, noneffervescent, indeterminate boundari.	a. vi
300- 335 OL (118-132)	dark vellowish brown (10VK4/6) medium sandi single grain, noneffervescent, gradual boundary	SP ndarv.	atura 490-07DU (157-193)	light clive brown (2.575/4) fine sand single grain, ver, slight), effervescent, indeterminate	ņ.
335- 500 0/DU (132-197)	light wlive brown (2.5%%) medium sand, single grain, ver, slightly effervescent, indeterminate boundary.	ingle SF. ninate	490- 640 07DU (193-252)	countrain.	ů.
900- 590 0'60 500- 592 (197-	eralish brown (2.5Y5/2) to limbt olive brown (2.5Y5/4) commers and, single grain, very slightly effervescent, indeterminate boundary.	en.	640 - 690 UU (252-272)	boundary. dark ørayist brown (2.574/2) silty fine sand, mass, ve. slightly effervescent, few fine organics,	g S
500-720+0/DU (232-283)	erailsh brown (2.595/2) to lisht clive brown (2.595/4) coarse veri coarse sand and mebbles, veri slightly effervescent, refusal.	un SM. bles,	690- 770+0/DU (272-303)	Increterminate boundari. brown (10YR5/2) medium to coarse sand, sinsle grain, very slightly effervescent, refusal.	œ.

5 5 5		26-22			
Master core number: 586 Location: SE.SE.SW.Sec.6 turn in the distributed avia Landscape position: edge Surface archeology: none SCS mapped soil: Sparta Elevation: 135,38. (4446 Cored by: David S. Leigh Described by: Edwin K. H.	Master core number: 566 Location: SE.SE.SW.Sec.6.Tich.RizW. Morean Co., 25ft. west of a 90 degree furn in the ditch dividing sections 6 and 7 turn in the ditch dividing sections 6 and 7 Landscape position: edge of slight degressional area on Bluffs (2) Terrace Surface archeology none SCS mapped soil: Sparta loam: sand Elevation: 135,3m. (444ft.) Cored by: David S. Leigh and Cinthia C. Danley, 6-6-84 Described by: Edwin K. Halic, 8-13-84	ಕ ್ತ ತಿಣಿಕಾಟ್ರಡ	Master core number: 587 Location: SWISE.SWISEc.6.TleN. Location: wast of a north-sout the east of a sinabit degress Landscape position: natural le Surface archeology: none SUI mapped toll: Worther silt Elevation: 135.3m. (444ft.) Cored by: David S. Leigh and C Described by: Eduin R. Haito.	SN.KLZW. Morgan Co., on east-west field life it is a low rise essional area leave of a low rise essional area leave of Indian Greet Paleochannel It loam Critis C. Danler, 6-6-84	0 T C C C C C C C C C C C C C C C C C C
Depth om Soul Horizon (in.) or Zone	Unif Description Classi		Deeth on Soil Horizon	Description	Unitied Soil Classification
0- 139 OL (0- 55)	solum of Sparta loams sand, clear boundars	-0 -0 -0	48 A1 19)	black (10VR2/1) silt loam, weak fine granular, frieble, noneffervescent, clear boundary.	뉥
139- 166 C(DL) (55- 65)	light olive brown (2.575/4) to light olive brown (2.575/6) fine sand, single grain, loose, noneffervescent, clear boundary.	SF 48-	87 A3 34)	very dark brown (10VRZ/2) «1)t loam, waal medium brancher, friable, noneffervencert, bradual boundar	₹
166-219 OL (65-86)	dark brown (10VR3/3) and dark vellowish brown (10VR4/4) and dark vellowish brown (10vr5/5) loams sand, stratified with two zones of sralish brown (2.5V5/2) sand, loam, noneffervescent,	-78 8748)	121 B21 48)	lisht olive brown (2.5V5/4) silt loam, weat fine subarsular blocky, friable, slightly effervacent, clear boundar	ਵੋ
219- 342 OL (86-135)	abrupt boundary. vellowish brown (10YR5/6) fine and medium sand, noneffervescent, lower half has some sand. loam units, indeterminant boundary.	121153 (4860)	153 B22 60)	dark braish brown (100K4/2) heavy silt loam, with many fine dark vellowish brown (100K3/4) mottles, moderate medium subansular block, friable, ver, slightly, effervescent, bradual boundary.	로
342- 406 DU (135-160)	dark gravish brown (10YR4/2) and dark vellowish brown (10YR4/4) fine and medium sand and silt, strongly effervescent, indeterminant boundary.	SP 153-	164 B31 72)	Brailsh brown (2.5Y5/2) heav, si)t loam, with man, fine light olive brown (2.5Y5/4) mottles, weak medium subangular blocky, friable,	로
406- 457 GU (160-160)	dark yellowish brown (10VR4/6) fine sand (with some silt), slightly effervescent, indeterminant boundary.	SP 184-	220 11B32 87)	nonestervescent; abrupt boundars; grasses brown (10VR5/2) sands class loams with man, fine dark sellowish brown (10VR4/6) mottles;	.
457- 600+DU (180-236)	dark startsh brown (2.574/2) medium sand well sorted to medium and coarse moorly sited sand, many very fine and fine pebbles, sitehtly.	3 5		weak coarse subangular blocks, tirm, noneffervescent, very few male brown (10YK6/3) fine coats on med taces, gradual boundars.	
	ゆがかのくないになった。 「のかにがぶ」、	220- 258 (87-102)	00) 288 110 (MDL.)	practs brown (2.5V5/2) sands class loam, with many medium dark vellowish brown (10V84/6) and with common fine weak red (2.5V65/2) faint mottles, weak coarse subansular blocks, firm, nonefervescent, abrupt bounders.	J

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olive grar (5Y5/2) silt loam high in sand, with man, fine dark rellowish brown (10YK4/4) and dark vellowish brown (10YK4/6) fe mottles, massive, very slightly effervescent, abrupt boundary.

258- 269 MUL (102-106)

269- 460+00 (106-181)

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dark vellowish brown (10VK4/4) finc and medium sand (with some silt), strongl, effervescent, refusal,

DLF NA Moster core number: SEO Hoster NE SW.SE.Sec.1,TleN.K13W. Morean Count. Landscape position: Indian Creek allovium SCS mapped soils Worther silt loam Elevation: 134.4m (441ft) Cored b.: DSL. CCD Described b.: DSL	Deeth on Soil Horizon (in.) or Zone Description Classification	0- 163 SOLUM silty cla. loam, clear bounder? CL (0- 64)	163-212 C(MDL) Trant olive eray (5Y6/2) fine silt, with common ML (64-83) medium vellowish brown (10YR5/8) mottles, massive, noneffervescent, very abrupt boundary.	212- 229 UU dark sta. (5Y4/1) silts clas loam, massive. (1 (88- 90) strongly effervescent, mans small sastropods and snails, clear boundary.	229-252 UU lisht brownish erax (2,576/?) medium sand, sinele SP (90-99) erain, very slightly effervescent, very abrupt boundary.	252- 270 UU darl erax (SY4/1) silty clax loam, massive, CL strongl, effervescent, many sastropods and snails, abrupt boundary.	270- 350+D/UU statish brown (2.5V5/2) medium and coarse sand. SF (106-138) with common medium clive brown (2.5V4/4) mottles. sinsle grain, very slightly effervescent, refusal.	
of east side of ditch 40ft.south of field rd. and on east side of ditch 40ft.south of field rd. and all leves of Indian Creek maleochannel it. clar loam b.c64	Unified Soil Description Classification	solum of Morthen salt leam, pradual boundary ML	eravish brown (2.5%5/2) light silt loam, with ML many fine and medium dark vellowish brown (10%K4/6) Fe mottles, massive to weall, laminated at base strongly effervescent, clear boundary.	CL CL	, 10	e w	ently ML	dark eney (SVA/I) silts medium and coarse sand, SP roorly sorted, common very fine and fine rebbles, violently efferweatent, refusal,
Mester core number: 568 Location: Nai.Nai.Nai.Sec.7.11 30ft. east of Hu100 on. Landscape position: natural Surface archeology: natural SCS marred soil: Tice silt. Elecation: 135.0m. (44.5ft.) Cored by: David 6. Leich an Described by: Edwin R. Haus	Depth om Soil Horizon (in.) or Zone	0- 142 0L/U (0- 56)	142- 244 C (MDJ) (-56- 96)	244- 266 MUU (96-105)	266- 283 MUU	283- 420 OU	420- 470 UU (165-185)	470- 500+UU (185-197)

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DLC-55						
Master Core number:		**************************************	DLC-56			
Location: NE.NW. NH. Sec. 0. 1364. acuth of ferce 1: Landscher position: disks Surface archelos: none SGS marred soil: Worther	Locations New New Sector How Miles and Co. in not the stand corner 1954, south or ferce line and or west edge of field road Landscare positions distal alluvial fan Surface archeologis none SCS marred soils Worther silt loam (SCS marred soils Worther silt loam (SIS) earred soils (SIS).	190 COC 1961	Naster core number: Location: NE.SE.SW. Landscape position: SCS mapped soil: PPELVAtion: 1055.6m.	Master core number: 591 Location: NE.SE.SW.Sec.19.117N.K12W. Cass Country Landscape Position: Bluffs terrace SCS mapped soil: Plainfield loamy sand Elevation: 155.6m (445ft)	_	
Cored by: David S. Described by: Edwi	Leigh and Lynthia C. Danie., 6-6-54 in R. Hadis. 6-13-64		Described by: DSL	a		
Depth cm Soil Horizon (in.) or Zone	Description	Unified Soil Classification	Depth on Soal Horazon (1n.) or Zone	120n Description		Unified Soil Classification
0- 224 OL	solum of Worthen sult loam, strong profule slushtly cumulic, clear boundary.	<u>.</u>	0- 30 SOLUM (0- 12)	logal wand, wradeal boundary		SP .
224- 377 C(MDU) (86-148)	enarish brown (2.5Y5/2) silt and silt loan, with mary fine and medium dark yellowish brown corrections of the second seco	, with ML	30~ 320 C(OL) (12-126)	dark vellowish brown (10964/4) medium sand. single grain, noneffervescent, diffuse boun	 medium sand, diffuse boundary. 	ij.
	increased at base blashive to moderately the mainated at base blashily to atronal, effervencent, common mentropods, whole and fraemented from 349-370cm., clear bounders.		320- 410 OL (126-161)	brown to dark brown (10YR4/3) medium sand, with few large dark vellowish brown (10YR3/4) mottles single grain, noneffervescent, few very coarse sand grains, diffuse boundary.) medium sand, with un (10VR3/4) mottles, t, few very coarse r.	g.
377- 450 DU (148-177)	dark arayish brown (2.5844/2) loam to lisht olive brown (2.585/4) loams fine sand with common servish brown (2.585/2) silt laminae, weakly stratified, nonefferescent to slishly effervescent with derth, indeterminant boundary.	olive ML n lv nderv.	410- 480 OL (161-189)	dark vellowish brown (10VR3/4) coarse sand, noneffervescent, few rebbles included, diffuse boundary.	4) Coarse sand. included, diffuse	ά.
450- 600+0 (177-236)	oxidiz>d sand(?), refusal	a.	480-540 07DL (189-213)	light olive frown (2.5%5/4) coarse sand, no rebbles, single grain, noneffervescent, diffuse boundary.	coarse sand, no fervescent, diffuse	ė.
	25-370		540- 590+0/DL (213-232)	light olive brown (2.575/4) coarse, very coarse sand, and Pebbles, noneffervescent, refusal.	coarse, very coarse escent, refusal.	MS.
	Master core number: 592 Location: NE.NE.NW.Sec.30 Landscape Position: Bath SCS mapped soil: Plainfie Elevation: 139.9m (459ft) Cored by: DSL CCD Fescribed by: DSL	.T17N.K12W terrace 1d loamy san	Cass Count√			
	Depth om Soil Horizon (in.) or Zone	izori	Description	Unified Soil Classification		
	0- 50 SOLUM (0- 20)	medium sand, eradus Doundary	ual boundary	a.s.		
	50- 480 OL (20-189)	dark vellowish brown (10VK4/6) to (10VR5/6) medium sand, single 9rai noneffervescent, diffuse boundary.	dark vellowish brown (10VR4/6) to vellowish brown (10VR5/6) medium sand, sinsle grain, noneffervescent, diffuse boundary.	nuish brown SP		
	450-540+0L (186-213)	dark yellowish bro single grain, nom refusal,	dark vellowish brown (10VR4/4) loamy medium sand, single grain, noneffervescent, buried solum \mathbb{R}^2 , refusal,	dium sand, SP olum 37,		

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Master core number: 593 Location: SW-SW,NW, Sec. 12:TIEN.RISU Landscape Position: dune on Bluffs 505 mapped soil: Sparta loan, soud Elevation: 135 9m (446ft) fored b.: DSL, CCD Described by: DSL	e number: 500 Sw.Sw.Nwisec.12.Tich.RICW. Morean County position: dune on Bluffs forrace 1 soll: Sparta loam. sold 1 135.9m. (446ft) bot. CCD			Master core number: 594 Location: SE.SE.SW.Sec.1.Tich.RISW. (Landscape Position: Indian Creek allu- 505 mapped soil: Tice silt, cla. loam Elevation: 133.8m (439ft) Cored b.: DSL. CCD Described bv: DSL	Master core number: 594 Location: SE.SE.SW.Sec.1.116N.K13W. Morean County Landscare resition: Indian Creet allovium SCS marred soil: Tice silt, cla. loam Elevation: 133.8m (439ft) Cored bi: DSL. GCD	
Depth om Soil Horizon (in.) or Zone	Zon	Unifie	Unified Soil assification	Deeth om Soal Horazon (an.) or Zone	Description Cl	Unified Soil assiztion
0-150 SOLUM (-0-59)	loam, sand, wradual boundary		a a	0- 25 SPOIL (-0-10)	clear boundary.	뒫
150- 200 C(OL) (59- 79)	vellowish brown (10YR\$/6) fine and medium sand, gradual boundary.	us sand.	g.	25- 205 SGLUME (0- 81)	sands sait loam to lambt sait loam at base. Clear boundars.	된
200- 228 (OL) (79- 89)	hellowish brown (109R5/6) coarse sand, sinsle grain, noneffervescent, clear boundars.	នរីកនាំខ	ů, vi	205- 289 Mil. (81-114)	light brownish gray (2.5%6/2) fing silt to light silt loam, with common medium light olive brown (2.5%/k) and with few medium light reddish brown	£
228- 273 OL (89-107)	motthed brown to dark brown (109R4/S) sandy loam, weak coarse subangular blocky, noneffervescent, clear boundary.	andy loam, vescent,	ŭ ŭ		(SYRE/S) mottles, weak coarse subarsular block; to massive, noneffervescent, becomes weall, laminated toward base, few Pebbles in matrix at base, abrupt boundary.	
273- 293 MBL (107-115)	light brownish grav (2.576/2) silt, with commo medium vellowish brown (10VRS/6) mottles, weak coar, e subangular blocky, noneffervescent, gradual boundary.	h Common S. Weak St.	뒾	289- 300 MDL (114-118)	light brownish grav (2.596/2) fine silt, with common medium red (2.5985/6) and with faint few medium light reddish brown (5986/3) motibes, nonefervecent, interstratified with hishly	로
293~ &30 07DU (115-248)	light ollive brown (2.5Y5/4) medium sand, singl grain, very slightly effervescent, indetermina boundary.	i single terminate	a. S		obidized orange very fine sand, corresion zones, clear boundars.	
630- 720 D/UU (248-283)	light vellowish brown (2.576/4) medium sand, single grain, very slightly effervescent, statementate hounds v.	serid, it,	g.	300- 310 MDL (118-122)	light clive brown (2.5V5/4) fine sandy loam, noneffervescent, interstratified with few 10VR4/6 fine sandy loam lenses, indeterminate boundar	ů. V)
720- 795 D/UU (283-313)	independent of the property of the property coarse and and rebbles, slightly effervescent independent boundary.	Very Vescent.	MS.	310- 480 OL (122-189)	dark vellowish brown (loyR4/6) medium sand, single grain, noneffervescent, indeterminate boundary.	a a
795- 845 D/UU	dark gravish brown (2.574/2) fine sand, single	sire)e nate	ŝ	480- 540 D/UL (189-213)	gravish brown (2.5Y5/2) medium sand, single grain, noneffervescent, indeterminate boundary.	ġ.
(335-356)	boundar. Light vellowish brown (2.576/4) coarse, very coarse sand and pebbles, very slightly effervescent, refusal.	¥	M 90	540- 600+D/UL (213-236)	statish brown (C.5Y5/2) coarse, very coarse sand, and pekhles, nonefferveschnt, refusal.	3 0

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Classafication Unified Soil prayish brown (2.595/2) fine silt, with faint common medium dark vellowish brown (10864/6) and with common medium light reddish brown medium sight reddish brown medium sight reddish brown more medium to a second sight were thin noneffervescent, becomes laminated with very thin dack vellowish brown (10984/6) sand: loam, interstratified with few thin lisht brownish sra: (2.5%2/2) silt lenses, weak coarse subansular blocks, noneffervescent, very abruet boundary. Fe and Mn heavily stained lenses in lower 10cm., light olive brown (2.5Y5/4) medium sand, sinale grain, noneffervescent, clear boundary. light olive brown (2.5Y5/4) medium sand, single sand, single grain, very slightly effervescent, light brownish grav (2.5Y6/2) medium to coarse light olive brown (2.5Y5/6) fine sand, single Brain, noneffervescent, clear boundars. Description loams sand, sradual boundary indeterminate boundary. clear boundary. Depth om Soil Horizon or Zone 0- 105 SOLUM 0- 41) 105- 158 C(OL) (41- 62) 238- 278 0/DL (94-109) 278- 300 0/DL (109-118) 315- 495 0/DL 158- 238 MDL (62- 94) 300- 315 DU (118-124) (10.) Unified Soi Classificatio ø. 3 ŝ ŝ ٦ 뒫 å 뒫 olive grai (SYS/2) silt, massive, noneffervescent. dark gravish brown (10VR4/2) coarse, very coarse dart olive grav (SYS/E) mebbly fine sandy loam, noneffervescent, indeterminate boundary. grain, noneffervescent, indeterminate boundary. olive gra, (SVS/2) fine sandy loam, weak fine subansumar blocky, noneffervescent, gradual sand, and metbles, noneffervescent, refusal. light olive grav (SY6/2) fine silt, massive: graitsh brown (2,5Y5/2) medium sand: single Location: NE.NE.NW. Sec. 12, T16N, F13M, Morean Count. Landscape resistivitible Island channel (old bed of Blue Fond) SCS naperd soil: Ambrau clay loam Elevation: 132.6m (435ft) (ored bit DSL, CCD no recovery, probably sand, indeterminate silty clar loam to heavy silt loam, clear Description noneffervescent, clear boundary. very abrupt boundary. boundary. boundar v. tounder .. Deeth on Soal Harazon (1n.) or Zone 0- 152 SOLUM (0- 60) 152- 180 C(DL) 448- 480+0/DL 235- 240 U/DL (-93--94) 240-420 02 180- 215 UL 215-235 UL (85-93) 420- 448 UL (145-176) (176-189)(60- 71) (34-165) (71- 85)

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Morgan Counts

Master dure number: 596 Location: NE:SE:Subsect.1116N:K13W. Landscape position: Bluffs terrace 500 masped soil: Sparta loam: sand

DLC-6.1

Elevation: 134.4m (441ft) Cored b.: DSL, CCD Described b.: DSL

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dart vellowish brown (109R4/4) coarse, ver, coarse sand, and pebbles, strongl, effervescent, refusal,

grain, strongly effervescent, indeterminate

toundar ..

(124 - 195)

495- 540+0L (195-213)

DLC-62			€ 2 + 2 TM		
Master core number: 597 Location: SwiNd-Nui-Sec.12:116N.R) Landscape Position: Bus Island chi SCS mapped soil: Ambrau cla. loam Elevation: 133.5m (433ft) Cored bi: ESL. CCD Described bi: DSL	Master core number: 597 Location: SH.NWINW-Sec.12.Ti6N.R13W. Morgan Count. Landscape position: Bus Island channel SCS mapped soil: Ambrau cla. loan Elecation: 133.5m. (433rt) Cored b.: DSL. CCD		Master core number: 500 Location: NE.SW.NW.Sec.29 Landscape Position: dune 505 mapped soil: Fainfiel Evation: 137.5m (451ft) Cored b.: DSL. C.D. Described b.: DSL.	Master core number: 598 Location: NE.SWANN, Sec.29.717N, R12W, Cass Count, Landscape Position: dune on Bluffs terrace SCS mapped soil: Painfield loam: sand Elevation: 137.5m (451ft) Cored b.: DSL, CCD Described b.: DSL	
Depth om Soal Horazon (an.) or Zone	Description	Unified Soil	Depth on Soil Horizon	Describtion	Unified Soi' Classification
0- 175 SOLUM (-0- 69)	sulty clave clear boundary	נ	0- 41 SOLUM (-0-16)	sand) leam, abrent beendar.	ű
175-232 BC (-69-91)	gravish brown (2.5YS/2) loam, with man, medium vellowish brown (10YRS/6) and with common large very dark dark promit brown (10YRS/9) mottles, weak common large of the common large of the control of the	# E	41- 164 2Bw (16- 65)	dark vellowish brown (10VKS/4) claiev sandı loam, moderate medium subansular blocki. noneffervescenti clear boundari.	C. B. C. C. C. F.
	して はっぱん かんしゅうしゅう こうじょう こうじょう かいま かいしゅうしょう こうじゅうしょう こうじゅうしゅう しゅうしゅう こうしゅうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう こうしゅう しゅうしゅう しゅう		164-342 C(OL) (-65-135)	vellowish brown (10YRS/6) to sellowish brown (10YRS/8) medium send, etratifical mits on Electrical	SP
232- 260 C(UL) (-91-102)	light olive gra. (CV6/2) silt, with few medium cellowish brown (10VR5/6) mottles, massive, noneffervescent, large krotovina seperates this zone from the zone below, indeterninate boundary.	ت. ج		thick dark religioush brown (1974) sand leam strata, noneffervescent, sand, loam strata uith weal medium subangular block/ structure, abrupt boundary.	constitution of the consti
260- 420 UU (102-165)	olive gra. (5Y5/2) silt, sandy loam, massive, very slightly effervescent, few light brownish grey (2.5Y6/2) medium sand strata at base, indeterminate boundary.	¥	042- 357 MDL (135-141)	light ollive grav (SVS/2) silt loam, with common medium rellowish brown (109RS/4) mottles, weak coarse subangular block,, ver, firm, noneffervessent, abrupt boundar	الا
420- 430+UU (165-169)	olive gra. (5V5/2) rebbly medium sand, ver; slightly effervescent, refusal.	G.	357- 397 OL (141-156)	dark vellowish brown (10YK4/4) sandr loam, stratified with few ver, pale brown (10VK7/3) less than 1cm. thick coarse sand lenses, noneffervescent, abrupt boundar	ů
			397- 480 OL	light olive brown (2,575/6) medium sand,	ù V

	noneffervescent, abrupt boundar	
597- 480 OL (156-189)	lisht clive brown (2.5Y5/6) medium sand, stratified with few thin strata of brown (10YK4/3) sandy loam, noneffervescent, indeterminate boundary.	Ω,
480- 610 D/DU (189-240)	light clive brown (2.5Y5/4) medium sand, one quartz pebble at 600cm., very slightly effervescent, indeterminate boundary.	ĝ,
610- 720 G/DU (240-283)	lisht olive brown (2.5YS/4) medium sand, sinsle grain, strongly effervescent, indeterminate boundary.	Ω,
720- 800 DU (283-315)	light olive brown (2.5Y5/4) to grailsh brown (2.5Y5/2) coarse sand, strongly effervescent, indeterminate boundary.	Ϋ́
800-840+0/EU (315-331)	light ollive brown (2.5YS/c) coarse and ver coarse sand, strong), effervescent, refusal.	73

	Location: SE, NE, SW, Sec. 6, T16N, R12W, Morgan Co., about 18 m. east of Hun.		
	SN. K12W. Mors		
Master core number: 559	cocation: SE, NE, SW, Sec. 6, T16	100 on field rd.	

Landscape position: natural levee of Indian Creel Paleochannel Surface archeologic none SCS magned soil: Onto loam Elevation: 135.9m. (446/ft.) Cored by: David S. Leish and Conthia C. Danley, 6-26-64 Described by: Edwin R. Hajic, 8-13-84

Depth om Soil Horizon (in.) or Zone	12on Description	Unified Soil Classification
0- 145 OL (0-57)	solum of a sandy loam, abrupt boundary	a.
145- 215 C(OL) (57- 85)	vellowish brown (10VR5/6) and dark vellowish brown (10VR4/6) fine sand and loamy fine sand, weakly stratified, noneffervescent, based on the first clay lamination below there is an abrupt boundary.	sh SP end, on the rupt
215- 345 OL&D/UU (85-136)	dark vellowish brown (10VR4/6) and dark vellowish brown (10VR3/6) fine and medium sand (with some silt), weakly stratified, few zones with fine sandy loam, few zones with olive star (5V5/2) and strayish brown (2.5V5/2) clay and sandy clay very slightly effervescent laminae, rest of unit is noneffervescent, indeterminant boundary.	Some some ine (2) and x very t is
345- 550 UU (136-217)	eraxish brown (2.5%5/2) and dark eraxish brown (2.5%4/2) fine and medium sand, slightly to strongly effervescent, inderterminant boundary.	rown (2. SP trongly
550- 720+UU (217-283)	stavish brown (2.5%5/2) and dark stavish brown (2.5%4/2) medium and coatse sand, peorly sorted, many very fine and fine pebbles (up to 1.5 cm,	rewn (2. SW ed. .cm.

diam.), violently effervescent, refusal.